COTTON

MARCH, SERVING THE 1940

Textile Industries

WRINKLES . . . or CHECKS

Which for Your Disabled Employees?

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THE wrinkles etched by worry, when a fellow's laid up by accident or sickness, have a way of smoothing out when regular checks roll in to help pay the bills!

Do your Employees have the benefit of such a plan?

Many leading Textile plants are enabling their Employees to enjoy a Welfare Protection plan that provides funds to meet the emergencies all workers face.

Without obligation, let us show you how a Provident Welfare Protection Plan can meet the particular needs of Employees in your own plant.

Such a Provident Welfare Protection Plan can help solve financial burdens of employees—***without cost to employers***—by meeting the extra expenses caused by

- Death in family
- Loss of time due to accident or sickness
- Hospitalization or operation when necessary
- Aiding dependents upon death of employee

PROVIDENT
LIFE AND ACCIDENT
INSURANCE COMPANY
CHATTANOOGA, TENNESSEE

• Specialists in Group Welfare Protection Plans for Over a Half-Century •

Ready Cash *As You Ship*

Get into the profitable habit of being paid in cash instead of waiting 30, 60 or 90 days for your money. Let Commercial factoring put your business on a ship-for-cash basis . . . now.

The process is simple—you get cash from us as shipments are made, but you extend regular terms to your customers.

The working capital previously tied up in accounts receivable is automatically set free for profitable use.

Reduce bookkeeping costs, eliminate credit checking and collection expense and be protected against all credit losses.

Acquire the ship-for-cash habit by writing for the complete facts . . . today.

COMMERCIAL FACTORS CORPORATION

Fred'k Victor & Achelis, Inc. Established 1828
Schefer, Schramm & Vogel Established 1838
Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

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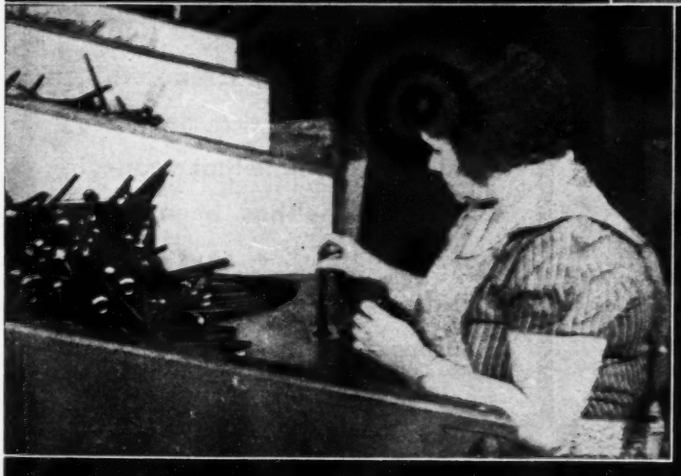
Entered as second-class matter at the Post Office, Dalton, Ga., under the Act of March 3, 1879.

Frequent Inspections the Secret Of Making Good Bobbins

All Draper Bobbins
Are Tested
to Your Spindle
Running at Speed

Inspected by Girls
Whose Eyes and Hands
Are Trained to Detect
Flaws in Stock
Manufacture or Finish

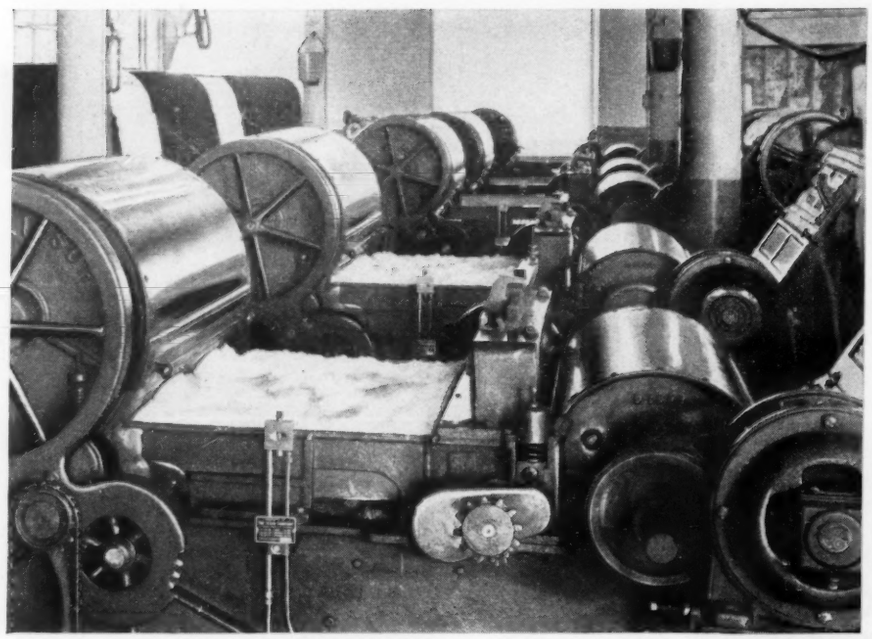


Every Bobbin
Individually Tested
by Standard
Draper Gauges

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

4 YEARS WITH Fibre Conditioning



PICKERS in Lydia Cotton Mills fitted with latest type of Texspray Fibre Conditioning equipment.

THIS COMPLETELY NEW 32-page booklet illustrates and describes the benefits of fibre conditioning and how to achieve them. A copy awaits your postal card request. Write for it *now*.

IMPROVED METHOD application . . . individual fibres coming into actual contact with the Texspray Compound on the surface of the applicator. (No compressed air needed.) Absolute uniformity of fibre treatment can be demonstrated.

A dry beater and beater chamber proves that all of the Texspray Compound goes onto the fibres. The percentage of Compound applied can be positively controlled.

The Texaco Texspray System is available to mills in the U. S. A. located in the recognized textile areas. For complete information, write:

The Texas Company, 135 E. 42nd St., New York, N. Y.

"We find that this system (the Texspray System of Fibre Conditioning) gives us healthier working conditions, that static is eliminated, and that fly and dust are reduced, so that we have a cleaner mill. We estimate that cleaning expense has been reduced 30%" — *says P. S. Bailey, V. P., Lydia Cotton Mills, Clinton, S. C.*

TEXACO

Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9:00 E.S.T., 8:00 C.S.T., 7:00 M.S.T., 6:00 P.S.T.

TEXACO Texspray System

STOPS FILM

Fibers are left spic and span and raw—natural and added oils are removed, earlier deposits of calcium soaps are dislodged, insoluble salts of calcium and magnesium are prevented from adhering—when the boil-off solution contains **WARNER TSPP**

The detergent, deflocculating, emulsifying, water softening and clarifying powers of TSPP make it an important textile chemical to improve results and reduce costs in boil-off operations.

Warner, American pioneer in the production of phosphates since 1886, has today not only large capacity production facilities but a solid background of technical experience in the application of TSPP. Your inquiry for samples, prices and technical data will have immediate attention.

OTHER WARNER CHEMICALS

Carbon Tetrachloride, 99.995% Pure

Carbon Bisulfide	**Barium Oxide**	**Caustic Soda**
Magnesium Oxides	**Barium Peroxide**	**Caustic Potash**
Blanc Fixe	**Bromine**	**Epsom Salt**
Barium Carbonate	**Chlorine**	**Hydrogen Peroxide**
Barium Hydrate	**Sodium Sulfide**	**Alumina Hydrate, Light**

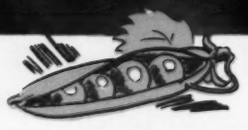
CHEMICAL WARNER COMPANY

DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

THEY SET A NEW STANDARD IN UNIFORMITY
MADE IN FIVE STANDARD CROSS SECTIONS AND A COMPLETE RANGE OF STANDARD LENGTHS
Elastic envelope takes the wear
High-tension section
Load-carrying cord in neutral section
High-compression section



More alike than peas in a pod!

IF you want perfect belt-teamwork on your multiple V-drives—if you want a battery of star performers all pulling evenly with no free-riders—you'll be quick to appreciate the following features of Goodyear's new improved E-C Cord Multi-V Belt:

UNIFORMITY OF CROSS SECTION—each belt is accurately molded to fit sheave groove in correct position.

UNIFORMITY OF STRENGTH—from a balanced load-carrying section with the same number of high-tensile cords throughout the length of *every* belt.

UNIFORMITY OF STRETCH—insured by a new Goodyear cord processing method which gives absolute control of cord characteristics. Cord is pre-shrunk, rubber-impregnated and gum-insulated for stronger carcass bond.

UNIFORMITY OF LENGTH—secured by measuring belts in standard grooves under actual drive conditions at operating tensions. A code marking permits selection of properly matched sets of belts from your stock.

UNIFORMITY OF PULL—new envelope construction enables all belts to grip sheaves evenly without binding or grabbing, insuring steady, equalized pull.

UNIFORMITY OF SERVICE LIFE—results from these many improvements. Each belt does its full share of the job and does it longer. And that means a new and higher standard of performance, efficiency and economy—*plus maximum service life!*

The G. T. M.—Goodyear Technical Man—will be glad to demonstrate these advantages of the new E-C Cord Multi-V Belt, easily identified by its attractive *green* color. To bring the G. T. M. to your mill write Goodyear, Akron, Ohio, or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.

E-C Cord—T. M. The Goodyear Tire & Rubber Company

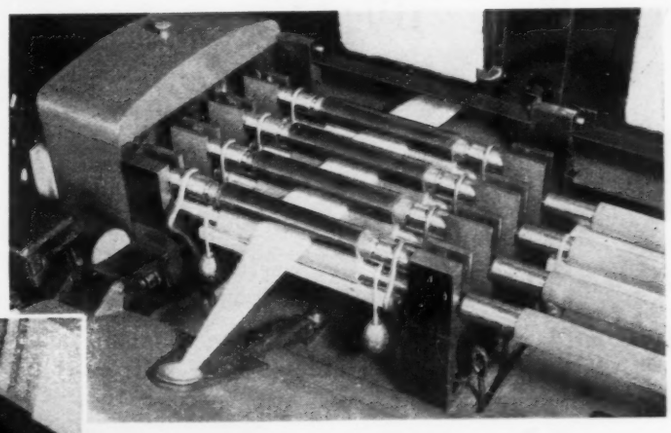
THE GREATEST NAME IN RUBBER

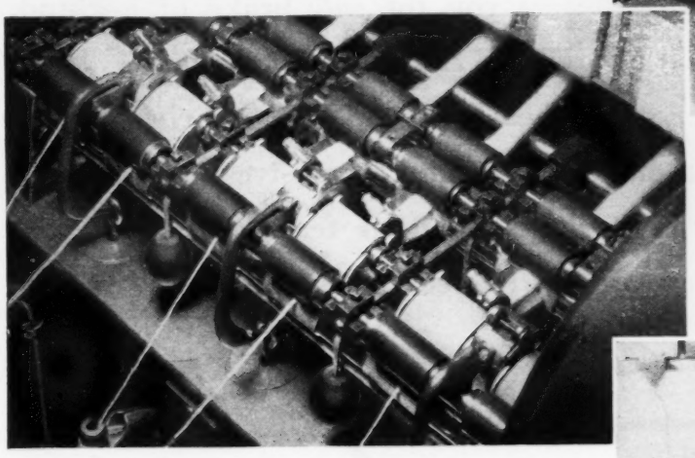
GOODYEAR

MULTI-V E-C CORD BELTS

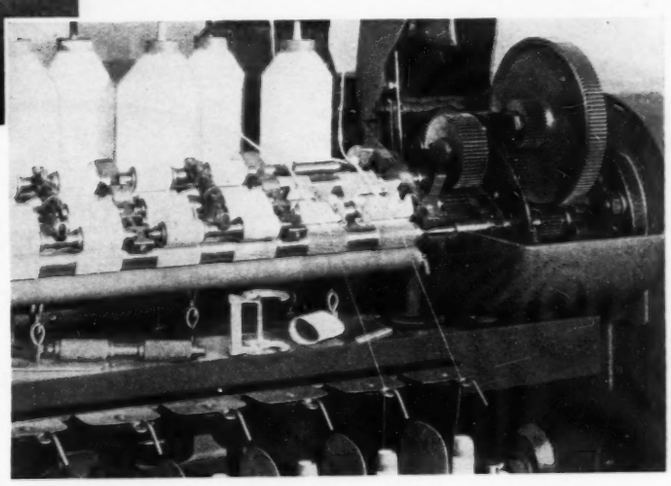
for PROCESSING MIXED STAPLES ON COTTON EQUIPMENT *Install*

THE NEW WHITIN
Drawing Frame with special wide roll stands, and larger diameter cushion rolls, for better control of fibers and evener sliver.





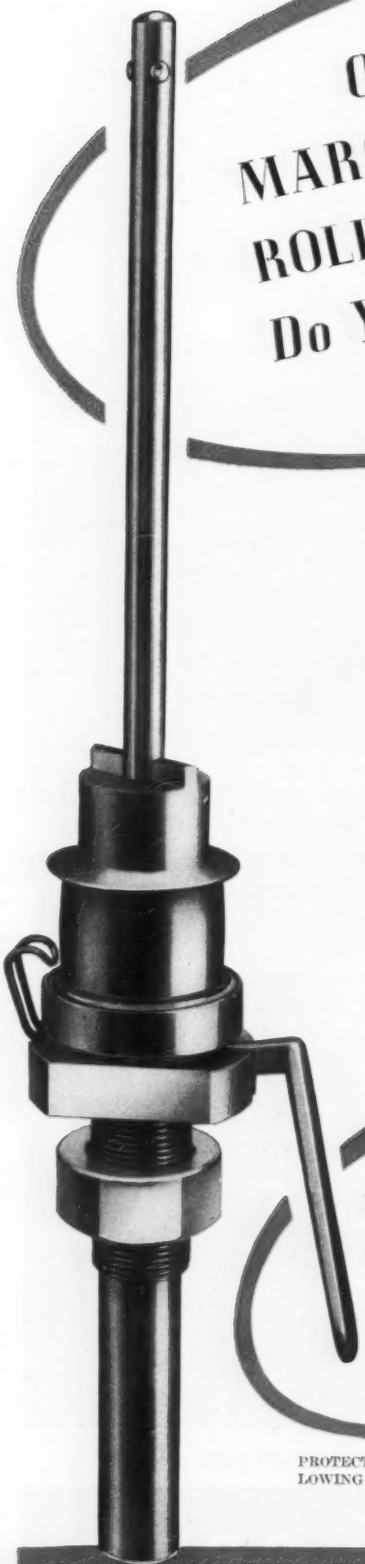
The apron carrier principle utilized in Super-Draft Roving, vital to best results. Only Super-Draft is capable of properly drafting mixed fibers of varying lengths.



Modern high speed, wide gauge Spinning Frames, incorporating the specially designed Whitin Long Draft System for maximum drafts. Full control of fibers within the high draft field, possible only with double carrier aprons.

SEE WHITIN REVIEW . . NOVEMBER ISSUE, FOR THE COMPLETE STORY.

WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. **ATLANTA, GA.**



Only on MARQUETTE NOVIBRA ROLLER BEARING SPINDLES Do You Get a BRAKE Like This!

● You may never need a spindle with a brake —but if you do, remember that MARQUETTE NOVIBRA offers you the *only* brake of its kind. Internal expanding... fast, smooth action... long wearing... no heat... no load on bearings. This is but one of the many exclusive and patented MARQUETTE NOVIBRA features. Illustrated circular will be mailed on request.

VELVET SMOOTH!
LIGHTNING FAST!
LONG WEARING!

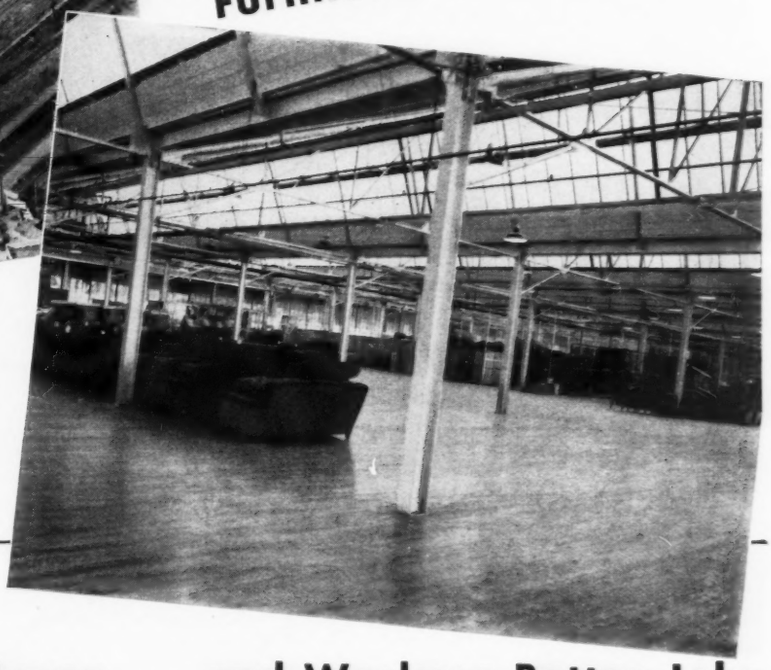
PROTECTED UNDER ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 2168247, 2168248, 2168249.

MARQUETTE NOVIBRA TEXTILE SPINDLES
MADE IN U. S. A. PATENTED
TRADE MARK

THE MARQUETTE METAL PRODUCTS CO.
1170 GALEWOOD DRIVE . . . . . CLEVELAND, OHIO
Byrd Miller, 308 Woodside Bldg., Greenville, S. C. . . . Stanley Norton, 25 West Derrosse St., Kingston, Pa.

Now, 9 Kroehler plants floored with HARD MAPLE!

. . . World's Largest Furniture Manufacturer



J. O. Taylor, Consulting Engineer, Kroehler Mfg. Co., says: *"Satisfaction with Hard Maple floors in the 8 other Kroehler Manufacturing Company plants influenced selection of* **MFMA** *Hard Maple flooring again in the new Dallas plant (No. 6) where 140,000 feet were used."*

A Floor that Gives Employers Better Workmen . . . and Workers Better Jobs

It's amazing in how many ways a floor affects efficiency. Here are just a few:

Warm, dry resilience underfoot postpones fatigue, stretches energy. Smoothness speeds up traffic with less effort. Good sanitation aids health, reduces lost time. Good light reflection makes for better "seeing." A "quiet" floor is easy on nerves, aids concentration. Cheerful appearance adds to workers' cheer as well.

All help keep a worker contented and make for better work. Each is part of every Hard Maple floor.

Kroehler, whose new Dallas daylight plant is shown above, believes that better working conditions make for better work and better profits.

With flooring, this policy involves no penalty. For Hard Maple is one of the longest-wearing of floors, is probably easiest of all to clean and maintain, and usually costs less per year of service.

That's why this flooring cuts costs, raises efficiency and keeps workers more content — **MFMA*** Northern Hard Maple, in strips or blocks. Consider it for *your* needs — ask your architect.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

• • •

See our catalog data in Sweet's, Sec. 11/78. Write for photographic folder on Northern Hard Maple and leaflet on heavy-duty finishes for old or new floors.

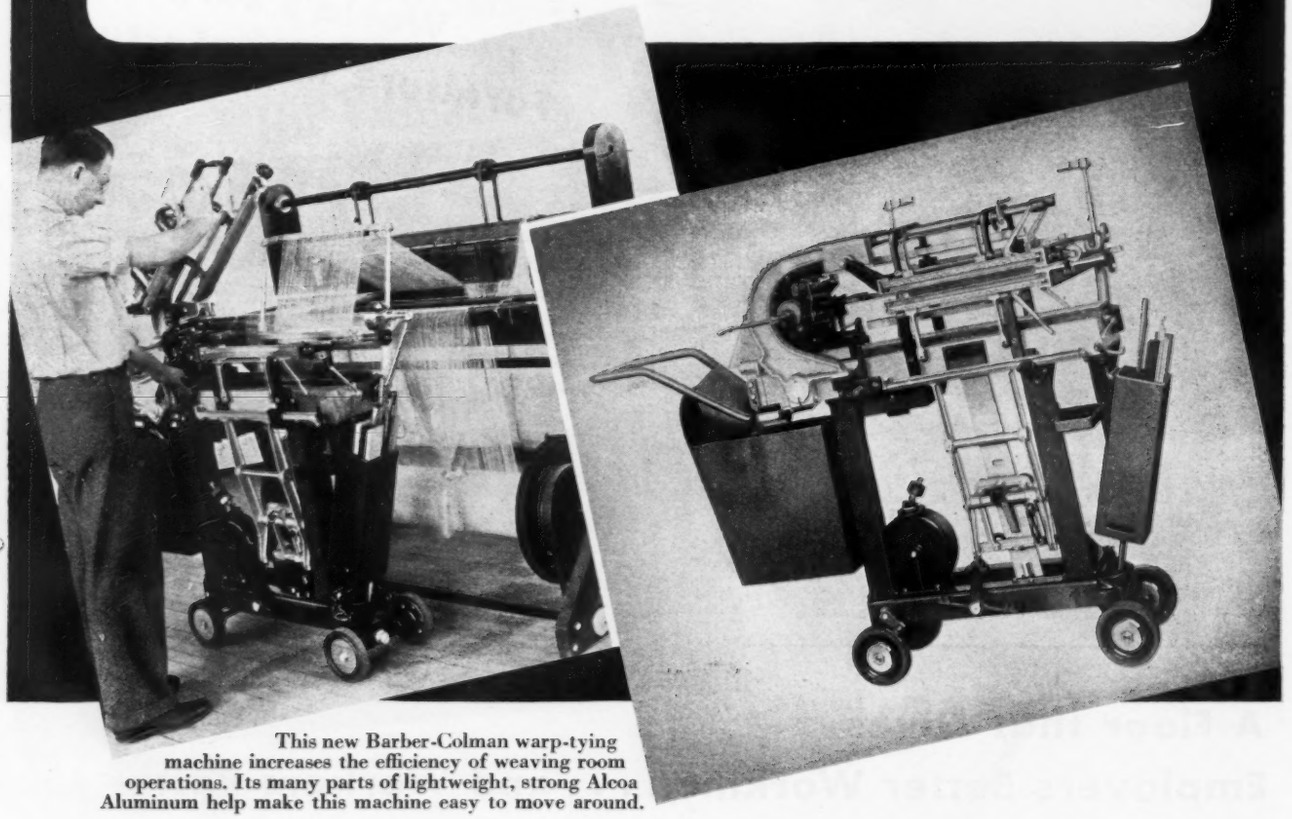
* *The* **MFMA** *trademark, indented and stamped on Maple flooring, guarantees it to be* GENUINE *Northern Hard Maple, graded and* **MFMA** *supervised in accordance with the Association's exacting standards.*

Floor *with* MFMA Maple

REG. U. S. PAT. OFF

(NORTHERN HARD)

THIS WARP-TYING MACHINE GOES *More* PLACES *Easier*



This new Barber-Colman warp-tying machine increases the efficiency of weaving room operations. Its many parts of lightweight, strong Alcoa Aluminum help make this machine easy to move around.

Negotiating this warp-tying machine through narrow loom alleys and from one weave room to another is easy. It weighs only 350 pounds, compared with the 590 pounds of the previous model. It is quite narrow, but there's no tendency toward topheaviness.

Cutting 240 pounds off of this machine was accomplished by redesigning it and making many of the parts of Alcoa Aluminum Alloys. The center of gravity was lowered. As a result, it gets around faster and adds to the efficiency of the textile mill's operations by reducing delays.

Most of the Aluminum on this machine is not painted, for, being highly resistant to corrosion, it needs no protective coating. There's no rust-staining of materials where Aluminum is used.

Have you a weight-saving problem? Alcoa engineers will gladly advise you on ways of employing Aluminum Alloys to best advantage. ALUMINUM COMPANY OF AMERICA, 1939 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA

ALCOA · ALUMINUM

PAWTUCKET RINGS fit the word smooth to a "T" . . . They're designed for grueling high-speed performance. And because they last longer . . . and require less attention . . . your replacement costs are kept at a minimum. Give your travelers a "turn for the better" . . . replace now with Pawtucket Rings.

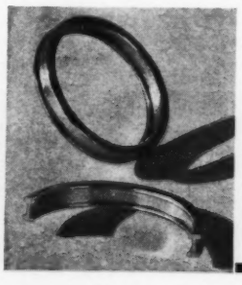
Vitritex finish

PAWTUCKET SPINNING RING CO.
(Subsidiary of Saco-Lowell Shops) CENTRAL FALLS, R. I.

CUT OUT AND KEEP THIS INFORMATION FOR PERMANENT REFERENCE

This is number 1 of a series. Here you will find practical information of interest to users of rings

THE DOUBLE ADJUSTABLE RING is extensively used, either with cast iron or plate holders. In many mills it is the practice to use one flange until the ring becomes worn, then to reverse the ring, the theory being that in this manner twice as much service can be secured from the initial investment. This is not altogether true, as there are some disadvantages to this practice. For example, there is the possibility of the operatives changing or turning the ring unknown to the overseer. In this manner the spinning conditions of the room are disturbed, due to some rings being run with a new flange, while others in the immediate vicinity are running with the traveller on the old flange. This has produced yarn irregularities which are extremely difficult to locate.



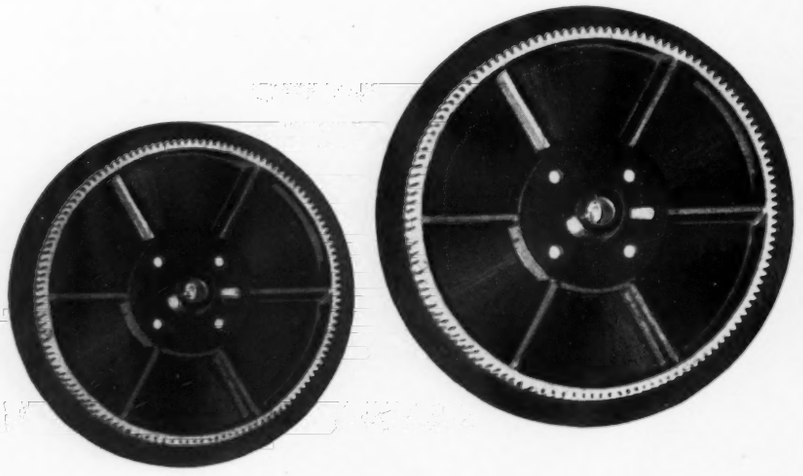
Furthermore, it is very seldom that rings which have been in use for any prolonged length of time can be turned and the standing flange used without repolishing or burnishing, either by the traveller or by some ring maker. In fact, many flanges which have been standing exposed to the heat and humidity of the spinning room for a number of years have been found to be so pitted as to be utterly beyond recovery, either by burnishing or any other means.

THE SINGLE FLANGE RING has long been given the preference in English mills. The advantage of the single flange over the double adjustable ring, as applied to the regular form of holder, of either steel plate or cast iron, is not in price, as both cost the same. The preference lies in the fact that the flange condition throughout the mill will at all times be uniform, making it possible to regulate the size of the travellers, with the assurance that all are in practically the same condition. It is unwise to say how long a ring will last, as this is entirely a matter of what is done to them, and how much care and attention they are given. Under ideal spinning conditions rings may last thirty to forty years, while under adverse conditions or if given abuse, the same rings can be ruined within a single year.

Saco-Lowell Shops, Boston, Mass.

LARGER BEAM-HEADS

Mean Bigger Profits!



PROVED—
By Performance

YES, There Is More Profit To Be Made By Investing In

LARGER BEAM-HEADS

Investment of money to equip your mill to run larger beam heads and longer warps will give an annual return of 40 per cent or more.

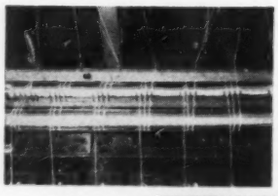
More yarn can be put on the beam with fewer run-outs on the loom. Fewer beams are handled, effecting a saving in the labor cost of slashing, tying-in, and placing beams in the loom.

Waste is reduced at both the slasher and loom. Loom efficiency is increased because looms run longer with less time out for changing warps.

West Point beam heads and beam barrels are superior in operation and economy.

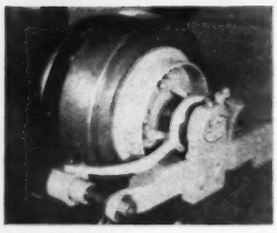
We also manufacture special textile machinery, cloth room machinery, and textile repair parts.

Other WEST POINT Products



THE BACHMAN GUIDE . . . eliminates heavy top rollers. "Blow Outs" reduced about 90%. Permits increase in twister speed.

ENERGY LOOM DRIVE . . . makes possible higher production per loom per hour . . . provides smoother loom operation.



GEARS . . . Gears of all types—noted for their efficiency and durability.

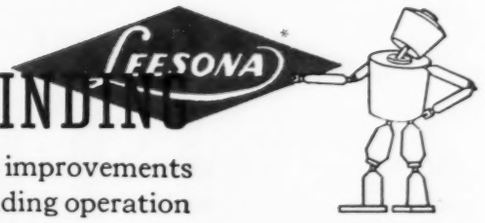
WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

THIS IS NO. 20 OF A SERIES ON

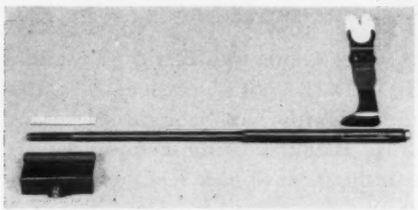
GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

POSITIONING OF YARN ON PACKAGE (No. 50 Winder)

When winding yarn on tubes, it is desirable to have the yarn located centrally on the tube, with the paper core extending out an equal amount on both ends. When winding on cones it is desirable to leave at least $\frac{1}{4}$" of the base of the paper cone extending beyond the winding point; it is also important not to wind on burnished or lacquered tip.



Latest design of one-piece Traverse Rod showing 24 threads per inch where Rod contacts Traverse Slide.

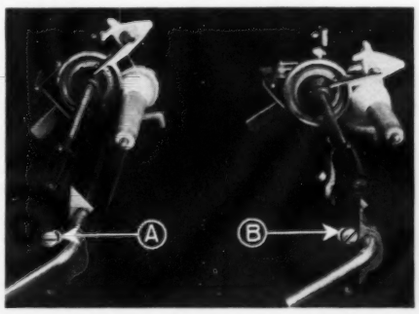
Positioning of the Thread Guide for the above purposes is accomplished easily on the No. 50 Winder. The Traverse Rod is screwed into the Traverse Slide, and turning the Rod in the Slide will change the position of the Thread Guide in respect to the bare container. There are 24 threads to the inch, so each revolution of the rod moves the Thread Guide 1/24th of an inch (.042") and three turns move it $\frac{1}{8}$ of an inch. A full revolution is required, since the Guide fits into a slot at the outer end of the Rod.

When installing new machines or when overhauling old ones, this adjustment can be made quickly. There is no need to change the position of the cam on the shaft.

PARALLEL-SIDED BOBBINS (No. 90 Winder)

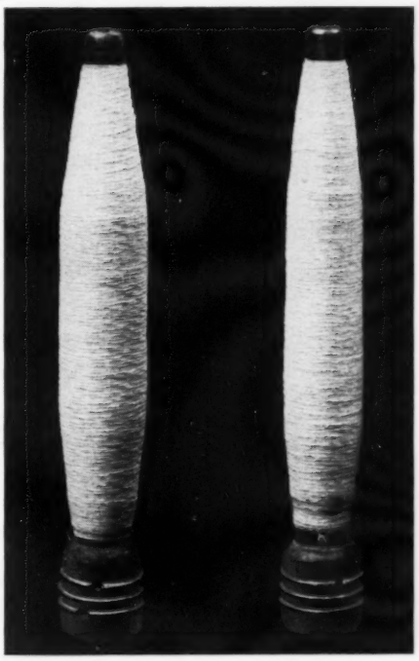
The No. 90 Winder is designed to build parallel-sided bobbins. With the Bobbin Attachment, which is used when winding onto cone base bobbins, the Traverse Bar is in one piece and is not adjustable. All bobbins produced with this attachment will be parallel-sided.

The Pin Cop Attachment is used for winding onto straight-sided bobbins and paper tubes, and in this case the Traverse Bar is in two pieces because of the necessity of using the Cop Former. The bobbins produced may not be parallel-sided, so there is an adjustment permitting the front end of the Traverse Bar to be moved right or left. Some mills do not take advantage of this



adjustment or purposely leave it out of adjustment, building bobbins which taper toward one end.

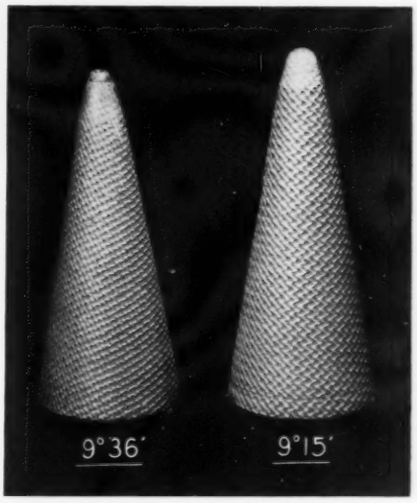
The illustration below shows two bobbins produced on the same spindle, but with different setting of the Traverse Bar Support Bracket. The bobbin on the left is the correct shape — it holds much more yarn and will run for a longer time in the shuttle.



The bobbin on the right was produced with the setting shown at A. The sides are tapered toward the tip end, which reduces the amount of yarn on the bobbin. Also, when removing this bobbin from the spindle, the greater diameter at the base of the bobbin may cause it to bind against the Traverse Wheel.

9°36′ AND 9°15′ TAPER CONES (Roto-Coner and No. 50 Winder)

Our service men have reported a few cases of mills having trouble on the No. 50 Winder and Roto-Coner due to mixed sizes of paper cones.



The illustration shows (left) the 9°36′ taper cone which is used on the Roto-Coner and all types of drum winders producing "open-wound" cones of cotton knitting yarn. The cone on the right has a taper of 9°15′ and is used principally for precision-wound cones of ply yarns, thread, etc.

The 9°36′ taper cone is $6\frac{11}{16}$" long; the 9°15′ taper cone is 7" or $\frac{5}{16}$" longer.

The inside diameter at the base of the 9°36′ cone is $2\frac{17}{32}$". The 9°15′ cone has an inside base diameter of $2\frac{39}{64}$", which is $\frac{5}{64}$" wider.

It will be seen immediately that there is enough difference between the two cones so they must be used with the proper cone holder, to get satisfactory winding results.

Special gauge used by manufacturer for checking 9°15′ cones. 9°36′ taper cones do not fit. Length should come within tolerance indicated by undercut section.

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

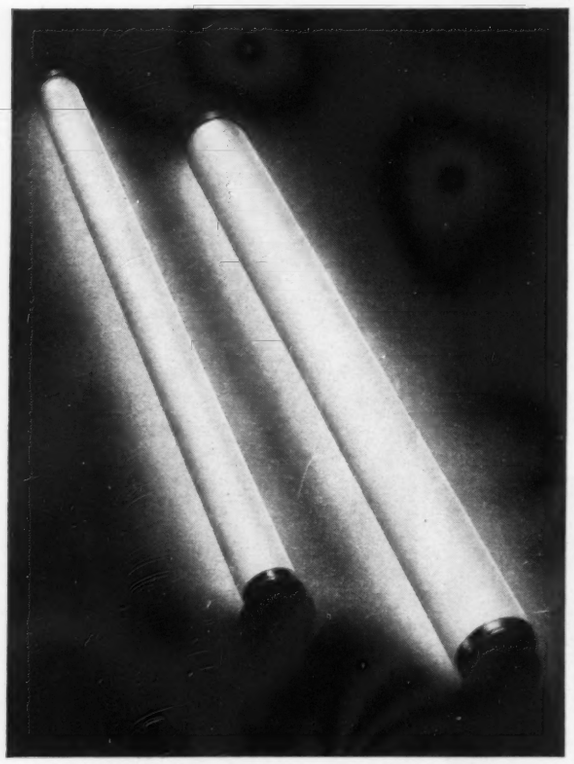
UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

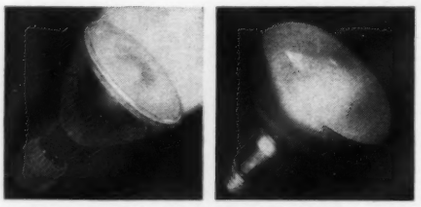
*Reg. U. S. Pat. Off.

General Electric Announces

NEW LOW PRICES



G-E MAZDA *Fluorescent lamps are recommended for use only with equipment providing good power factor. The lamp to the left in the above photo is the T-8 size which is 1" in diameter... the other is a T-12 size which is 1½" in diameter.*



G-E MAZDA Projector lamps (left) combine reflector, lens, and 150 watt filament in one sealed-in unit. G-E MAZDA Reflector lamps (right) are for indoor use. Both lamps come in Spot and Flood types.

ON FLUORESCENT AND OTHER G-E MAZDA LAMPS OF IMPORTANCE TO BUSINESS AND INDUSTRY

EFFECTIVE March 1, 1940, General Electric announces new low prices on G-E MAZDA F (fluorescent) lamps. Greater demand for these lamps has brought increased production. The resulting manufacturing economies are passed on to customers in the form of new low prices. This price reduction marks a real contribution toward lowering the installation cost of fluorescent lighting in stores, factories, theatres and other places.

CAUTION: As marvelous as this new fluorescent lighting is, it must be used correctly. There are many places where fluorescent lighting is ideal. Others where some other type of lighting may prove more desirable. Be sure to consult a qualified lighting expert who can assist you in getting the type of lighting you require. General Electric Company, Nela Park, Cleveland, Ohio.

Fluorescent (Daylight and White lamps)

WATTAGE	BULB SIZE	WAS	NOW
15	T-8	$1.35	**$1.15**
15	T-12	1.70	**1.45**
20	T-12	1.90	**1.65**
30	T-8	1.85	**1.50**
40	T-12	2.70	**2.30**

Blue, Green, and Pink fluorescent lamps

15	T-8	$1.45	**$1.25**
15	T-12	1.80	**1.55**
20	T-12	2.00	**1.75**
30	T-8	1.95	**1.60**

Gold and Red fluorescent lamps

15	T-8	$1.55	**$1.35**
15	T-12	1.90	**1.65**
20	T-12	2.10	**1.85**
30	T-8	2.05	**1.70**

OTHER PRICES ALSO REDUCED. The 150 watt G-E MAZDA Projector lamp (both Spot and Flood types) is reduced in price from **$1.70 to $1.40.**

The 300 watt G-E MAZDA Reflector lamp (both Spot and Flood types) is reduced from **$1.90 to $1.70.**

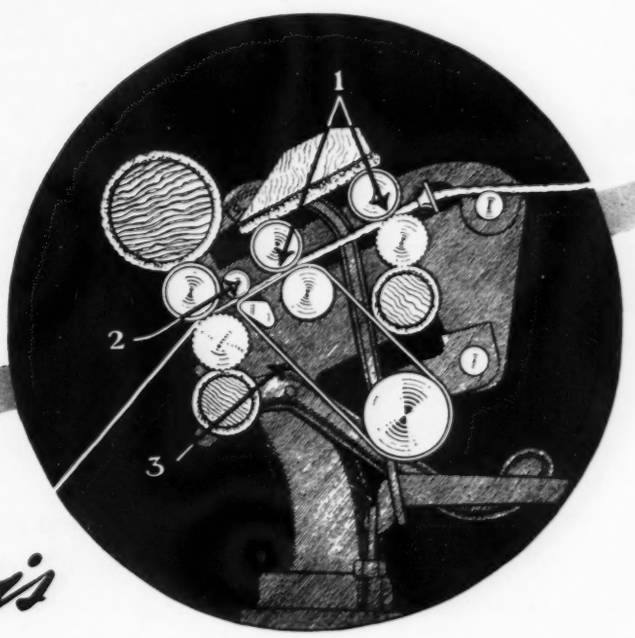
Also effective March 1, 1940, General Electric announces price reductions on G-E MAZDA Lumiline lamps and certain high voltage lamps.

G-E MAZDA LAMPS
GENERAL ELECTRIC

YEAR BY YEAR, BETTER LAMPS FOR EVERY PURPOSE

There must be a Reason . . .

OVER 6,000,000 SPINDLES EQUIPPED WITH SACO-LOWELL BETTER DRAFT UNITS



. . . and there is

TO SUM IT ALL UP in a few brief facts, the "Reason" is . . . better and stronger yarn of consistently high quality . . . lower cost . . . less waste . . . fewer ends down . . . and a definite increase in production per spindle.

THUS A MILL IN SOUTH CAROLINA after installing Saco-Lowell Better Draft Spinning eliminated 78 Roving Frames, cut their spindle requirements from 40,608 to 33,440 . . . and did this without reducing their gross production a single pound.

MILLS THAT HAVE INSTALLED Saco-Lowell Better Draft Spinning have found that its efficient fibre control permits the drafting of all commercial cotton . . . as well as synthetic staple fibres and mixtures of these with cotton.

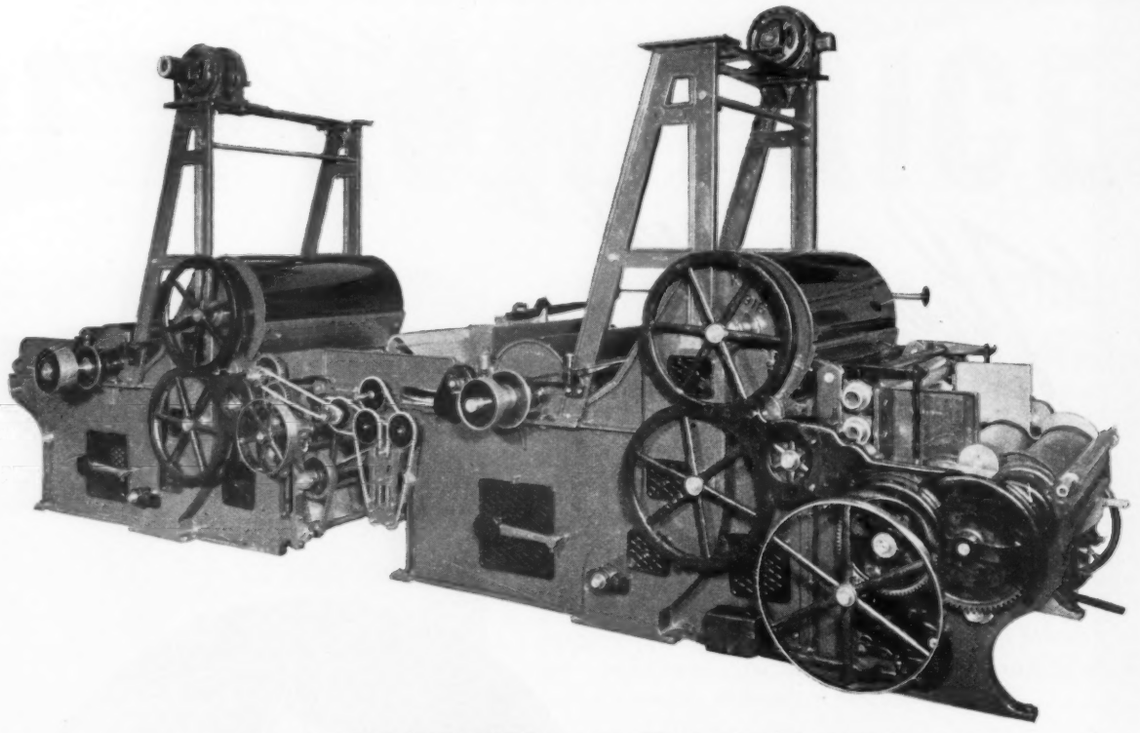
FOR OTHER "REASONS" write for copy of our latest bulletin on Saco-Lowell Better Draft Spinning.

1. A DEFINITE BREAK DRAFT assured by two positively weighted rolls with highly effective fibre-holding and fibre drafting surfaces.

2. A CONTROL ROLLER feeds the shorter fibres with regularity, and allows the longer strength-giving ones to be drawn from the strand without breakage.

3. A CARRIER APRON whose single function is transporting the strand of unlocked fibres. It has nothing to do with the drafting, and its performance is unaffected by age or atmospheric conditions.

SACO-LOWELL SHOPS 60 Batterymarch St., Boston, Mass.
Charlotte, N. C. Greenville, S. C. Atlanta, Ga.



A NEW PICKER BUILT INTO OLD FRAMES

The working parts are new—the frame, which will last forever if not broken, is old.

The cost is therefore about half the cost of putting the new working parts into new frames.

The picker is equipped with the Aldrich Synchronizer which has uniformly produced laps making evener card sliver than laps produced by any other picking system.

This picker is arranged to be fed either with the conventional hopper feeder or directly from the Gyrator, Cleaning, Blending and Distributing Machine provided with automatic feed boxes.

Every modern improvement which should be on a picker is built into this one—there is nothing old about it but the framework.

Your old pickers can be made into new pickers right where they sit on the floor, with little delay or inconvenience.

AldricH MachinE

Greenwood, **WorkS** South Carolina

Basically different Principle means...

LESS WEAR
LESS MAINTENANCE
LONGER LIFE

The Westinghouse Hermetically-sealed Unit

...the HEART of every "TEMPERED COLD" WATER COOLER

...reduces maintenance costs by eliminating (1) Belts (2) Pulleys (3) Gaskets (4) Shaft Seals (5) Commutator Brushes.

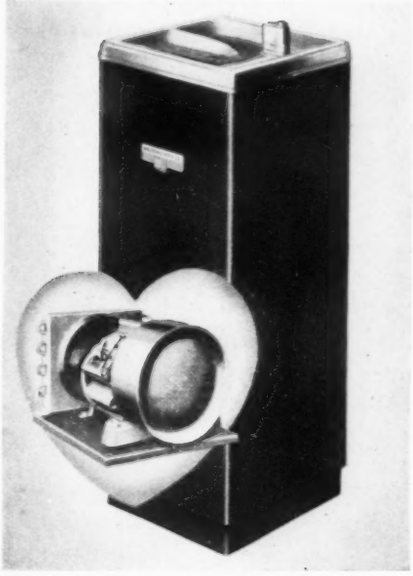
Fewer parts to wear. Even these parts operate in a permanent supply of oil. No oiling necessary. Built-in Watchman prevents costly motor burnouts. All this means EXTRA years of trouble-free performance.

CUT MAINTENANCE COSTS

...with the PERMANENT COST CONTROL PLAN

Modernize your drinking water system and save money at the same time with this Westinghouse 3-point plan:

1. Standard one-year free replacement warranty on unit and cabinet.
2. During the next four years, if the Hermetically-sealed Unit should fail, Westinghouse replaces it without charge—and pays all transportation and labor costs.
3. After 5 years, if and when the Hermetically-sealed Unit should fail, Westinghouse will replace it on an equitable exchange basis. The exchange unit carries four years' replacement protection with all the features of the second part of the plan.



Exclusive "PLUS VALUE" Features

Non-Clog Drain • Stainless Steel Top • Special Capacity Booster • High Efficiency Cooling Chamber • Built-in Watchman • Hermetically-sealed Unit.

Westinghouse "Tempered Cold" WATER COOLERS

"Build Friendly Relations"

Westinghouse Section 78, 653 Page Blvd., Springfield, Massachusetts

Please send complete details on Westinghouse "Tempered Cold" Water Coolers and the Permanent Cost Control Plan.

Name .....

Address .....

City ..... State .....

Long Live BEARINGS!

Three ways to help: consider the effect on your oils of LOAD, of HEAT, of CONTAMINANTS

LET'S LOOK at bearing lubrication through the eyes of your plant engineer—a highly practical person. He usually does little talking about lubrication theories. He sees lubrication as one of the important means to the end he's after . . . which is to give you all the operating efficiency your machines can deliver at the lowest cost.

But he's thinking always of your actual machines—some of which have to work under abnormal conditions. Does it pay you to run one of them at a fairly consistent overload? Very well; he'll just have to adjust his lubricant to that overload. Perhaps another one has to inhale a lot of sulphur; a third works in atmosphere choked with dust. He'll just allow for those contaminants in figuring what oil best does the job, and how best to purify it.

Among the many conditions he deals with, in choosing and controlling his lubricants, he's certain to lay emphasis on these three: operating *loads;* range of bearing *temperatures;* extent and kind of *contamination.*

The Load on a Bearing

The job of a bearing lubricant, stated simply, is, of course, to form an oil film that keeps the metal of the journal from touching metal of the bearing. It's always easy enough to agree on basic theories.

But let's suppose that in one of your bearings you've figured on a normal unit of pressure of 500 lbs. per sq. in. Under that load the oil you're using maintains a perfect oil-wedge formation, like that in Fig. 3 above. Later, it happens to make sense for other reasons to throw an extra 200-lb. load on that bearing. As the journal is pulled downward, the oil film on the pressure side becomes thinner . . . and thinner. Does it reach the danger point? That depends on what adjustments your engineer has made in his oil.

How Much Heat?

Yet he can never deal with this problem in isolation. He must at the same time keep in mind the bearing temperature. Temperature, as you know, acts upon oil viscosity both as cause and effect. Is viscosity too low? The oil may be squeezed out—result: metal-to-metal friction—and up goes the heat. Yet too heavy an oil sets up excess fluid friction, generating and holding heat: bad first for the oil; soon after, hard on the bearing.

Here, too, your engineer gets the effective lubricant only by considering in each of your bearings *all* the factors that may alter the temperature.

Three Stages in the Formation of the Oil Wedge

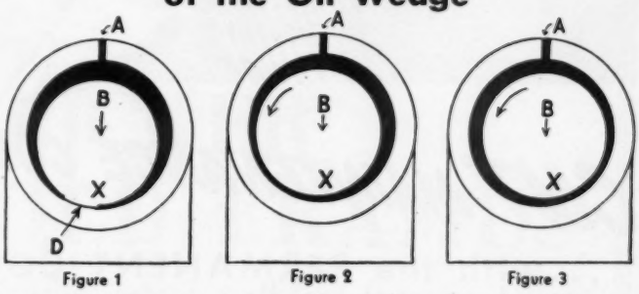


Figure 1 — Journal (X) at rest. Metal-to-metal contact and high-pressure point at (D). Load (B) vertical. Lubricant-introduction point at (A).

Figure 2 — Journal (X) starting in motion. Oil film and wedge create high-pressure point where metal-to-metal contact existed in Fig. 1.

Figure 3 — Journal at full speed. High-pressure point has moved to the right following direction of journal motion and pressure of oil wedge.

Contamination—and Control

Then there's the question of contaminants of all kinds. Your engineer never forgets the active agents that set busily to work on a fresh lubricant as soon as it's in. He has to know where oxidation may occur with each lubricant. He knows when the resulting sludge is apt to fill up oil grooves or clog feed lines.

At least, he knows all these things to watch for, and many others, too, if he's going to insure your bearings the care that they deserve. Shell has often helped, from its years of experience in a variety of bearing problems, to supply the one or two clues which may be all you need to improve your bearing operation or to lower your operating costs. Call in your Shell lubrication man. You and he have the same end in view . . . longer life for bearings.

SHELL

SHELL Industrial Lubricants

Constantly

for over

100 Yrs.

the more exacting and successful
mills have been using

GILLEATHER
ROLLER COVERINGS

You cannot fool time as a test for anything; for time, and time alone, will tell.

All the sales chatter in the world cannot overcome, or disprove, actual accomplishments, especially when they extend from one generation to another.

Use GILLEATHER and lower your operating costs as well as spin better yarn.

But Don't Confuse

GILLEATHER

with any other leather

as the animals from whose pelts GILLEATHER is made would never recognize themselves after the many painstaking and scientific processes and operations through which they pass.

The entire structure of the molecules of these skins is changed and we obtain a leather never heretofore produced except by **GILL.**

That is Why

It Cannot Be Equalled

by any roller covering material on the market today—or ever—irrespective whether from a Cost, Maintenance, Quality-of-spinning,

or

any other viewpoint.

Send for some of this interesting and instructive data. It's free.

GILL LEATHER COMPANY

Plant & General Offices

SALEM, MASS.

District Representatives

GASTONIA, N. C.....W. G. Hamner
GREENVILLE, S. C.....Ralph Gossett
GREENVILLE, S. C.....W. J. Moore
GRIFFIN, Ga.....B. C. Plowden
UTICA, N. Y.....Campbell & Jefferson Co.

Printed in U. S. A.

YARMOR 302 *Puts water to work*

IN KIER BOILING OF COTTON

Yarmor 302 in the kier leaves uniform bottoms that bleach whiter, dye and finish more evenly—really puts water to work.

Yarmor* 302 has no peer for all-'round wet-processing efficiency. In kier-boiling, for instance, it is the standard assistant, and here's why.

With Yarmor in the kier, the mill is sure of clear, permanent whites that are actually easier to process further. Spotty kier work is eliminated. In wetting out, the cotton is penetrated thoroughly, evenly, rapidly—the liquor comes in contact with every fiber. Hot alkaline liquor under pressure doesn't reduce Yarmor's activity, and, once the fatty, waxy materials are loosened, Yarmor holds them in suspension. Back-precipitation is prevented. Thorough rinsing can get each fiber clean. And, since the fibers are thoroughly clean, the boiled-off cotton resists age-discoloration, bleaches whiter, and dyes and finishes more evenly. Boiling time is cut, and the fibers are softer and fuller.

Yarmor 302 gives triple-action assistance in all wet processing—puts water to work wherever water is used. It is a penetrant, a dispersant, and a detergent-assistant. Yarmor, because it contains a very high percent of active terpene alcohols, not only works harder, but emulsifies quickly, and saves you money.

Try Yarmor sometime soon. Watch it go to work for you.

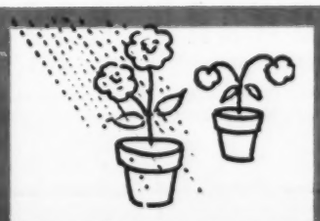
*YARMOR IS THE REGISTERED TRADEMARK FOR HERCULES' BRAND OF HIGHLY-PURIFIED PINE OIL.

Naval Stores Department

HERCULES POWDER COMPANY

WILMINGTON, DELAWARE

YARMOR 302 GIVES TRIPLE ACTION



WETS

DISPERSES

SUSPENDS FOR RINSING

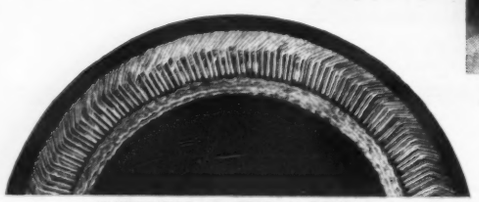
TUFFERIZED Napper Clothing

U. S. PATENT NO. 2,174,173

Produces a Soft, Velvety Nap for You

Like a kitten's fur, your blankets have a soft, fluffy nap when you use Tufferized Napper Clothing—an exclusive patented-precision-process. Each fine wire is clean, smooth, flexible, exactly the same length and uniformly spaced to produce a uniform and perfect nap.

Write for sample and more complete information impossible to give in this limited space, or invite our Representative to show you a four-minute visual story of Tufferizing.



TUFFERIZED NAPPER CLOTHING

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C. *Branch Offices:* Philadelphia, Dallas
Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

---

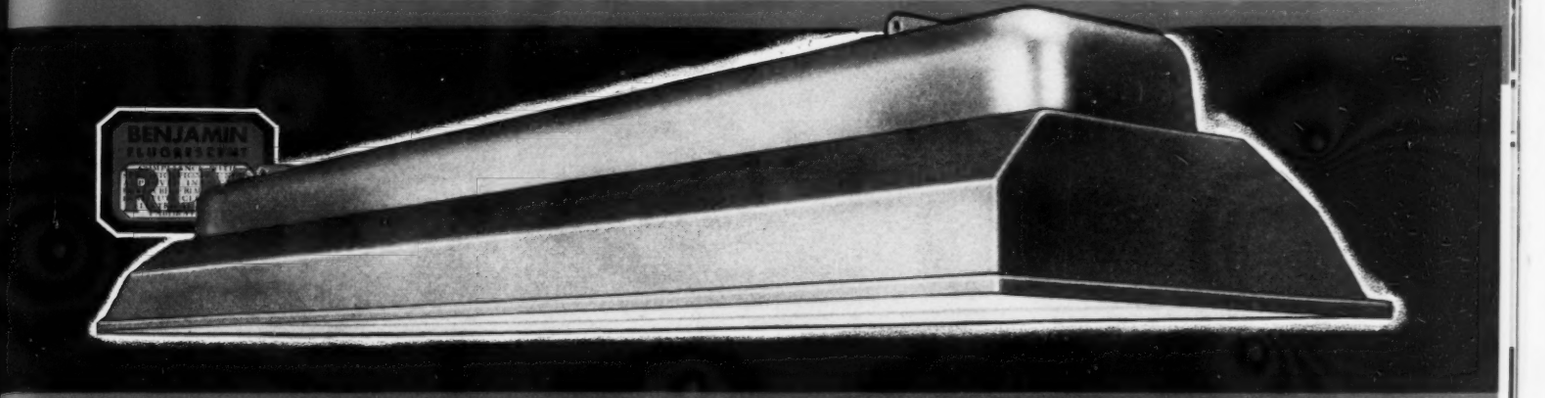
Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

Learn the Facts and See the Advantages of Fluorescent Lighting First Hand!

REQUEST A FREE DEMONSTRATION OF THE BENJAMIN RLM STREAM-LITER IN YOUR PLANT!

DURABLE PORCELAIN ENAMEL REFLECTOR—EASY to CLEAN

Time has proven the superior diffusion, sustained efficiency, low maintenance cost and durability of porcelain enamel reflectors. Unaffected by heat, cold or atmospheric conditions, it is easily restored to initial efficiency by washing with soap and water.



ONE-QUARTER of the RADIANT HEAT-LAMPS COOL to TOUCH

Foot candle for foot candle, STREAM-LITER Fluorescent lighting has one-quarter the radiant heat of other forms of lighting—ideal for air-conditioned interiors, work on delicate mechanisms or where lighting units are located low over the heads of workers.

CLOSED REFLECTOR ENDS and PROPER CUTOFF SHIELD EYES

STREAM-LITER'S deep reflector design provides a 72½ degree angle of cutoff—the accepted standard of good lighting practice—which together with closed reflector ends assures adequate shielding to hide lamps from view at normal angles of vision.

UNTIL you've had an actual demonstration of Fluorescent Lighting as provided by Benjamin RLM Stream-Liter Units, you cannot possibly appreciate the truly remarkable qualities of this new lighting and the constructional and operating superiorities of the Benjamin RLM Stream-Liter Unit.

Why Thousands of Plants Have Installed the Stream-Liter!

The new sensation of restfulness . . . comfort . . . and ease of seeing which you will experience under Benjamin Stream-Liter Fluorescent Lighting will make immediately evident the reasons why thousands of plants have installed Benjamin Stream-Liter Units for general illumination.

Through such a demonstration you will gain a better conception of the important part Fluorescent Lighting is destined to play in all future factory lighting. It will enable you also to secure quickly the salient quality construction, operating and installation features of the Benjamin Stream-Liter which have made it the leading Fluorescent Lighting Unit for general plant illumination.

No Cost or Obligation

All arrangements for your demonstration will be made by Benjamin through your local electrical wholesaler. Simply mail the coupon or address your letter to the Benjamin Electric Mfg. Co., Des Plaines, Illinois, makers of Lighting Equipment for every industrial requirement including a complete line of Fluorescent Lighting Equipment for both general and localized illumination.

BENJAMIN TRADE MARK

LIGHTING EQUIPMENT

Distributed Exclusively Through Electrical Wholesalers

FREE-DEMONSTRATION REQUEST

BENJAMIN ELECTRIC MFG. CO.
Des Plaines, Illinois.

We would like to have you arrange a special demonstration of your STREAM-LITER Fluorescent Lighting Unit in our plant on or about _____ with the understanding there is to be no cost or obligation.

Name _____

Firm _____

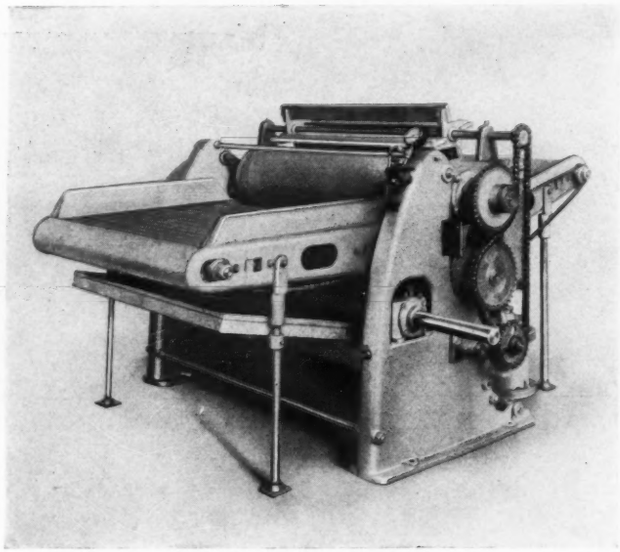
Address _____

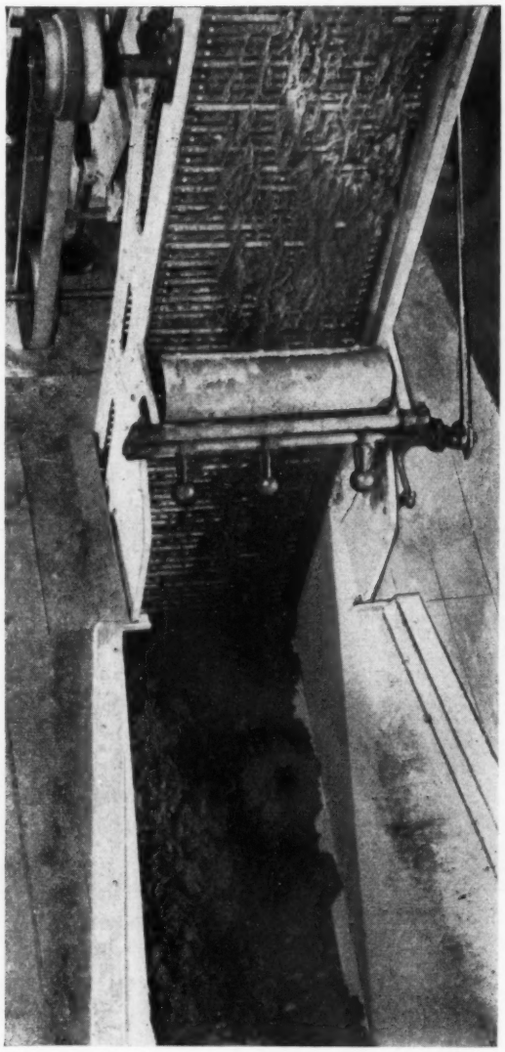
City _____ *State* _____

Our Wholesaler is _____

HOW TO EXTRACT MOISTURE FROM STOCK

Continuously and Automatically





The units pictured on this page show separately the most modern and efficient way to extract moisture from raw and dyed stock.

Operation is simple and continuous. Your operator discharges the batch into the hopper of the pit feeder. The stock then flows continuously through the squeeze rolls, through a blower system to the dryer feed. Only one operation is required and only 5 to 10 H. P.

These up-to-date Hunter Units--Pi Feeder and Hydraulic Squeeze Rolls are in daily operation on bleached and dyed cotton, jute, wool, rayon and etc.

We invite you to write for specific savings made with these units (one dye house reports a savings of $15,000.00 yearly). We will also send you details of the new Hunter Raw Stock Dryer and Rotary Feed.

JAMES HUNTER MACHINE COMPANY

FOUNDED 1847 **NORTH ADAMS, MASSACHUSETTS**

Southern Agent: CAROLINA SPECIALTY CO., Charlotte, N. C.

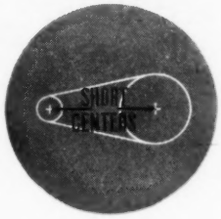
Western Representative: E. G. PAULES, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Cal.

FACTS

About Allis-Chalmers Texrope Drives . . . How They Help You Transmit Power Better . . . Easier . . . Cheaper!

These Texrope Features are Important to You--

SHOCK-PROOF FEATURE PROTECTS YARN. Texrope Drives do not slip . . . do not jerk . . . do not break fragile yarn on the frames. This distinctive feature was the original reason for developing Texrope Multiple V-Belt Drives . . . and why Texrope today is the popular drive for mill operators.

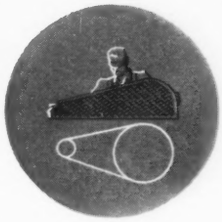


SHORT CENTERS FOR SPACE SAVING. Texrope V-Belt Drives permit putting source of power close to spinning frame being driven. There's no waste space . . . no unsightly shafts to keep out light.

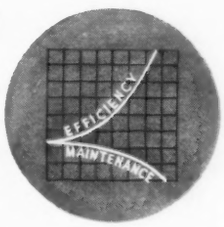
INDIVIDUAL DRIVE PRINCIPLE CUTS POWER COSTS. When each machine has its own drive, power is consumed only when machine is producing. This helps you keep textile mill power losses to a minimum.

A 1206

FLEXIBILITY OF LAYOUT... EASY TO INSTALL. You don't have to change over machines or existing layouts to fit Texrope Drives. They'll operate in practically any position without losing their efficiency . . . and they're easy to install.



SAFETY . . . EASILY AND ECONOMICALLY GUARDED. You eliminate danger spots when you install Texrope Drives. Because of their short centers, it's easy to slip a small, inexpensive guard over them.



EFFICIENCY HIGH . . . MAINTENANCE LOW. With Texrope Drives, transmission losses from motor to machine are cut to a minimum. There's no belt slip . . . no unnecessary wear and tear on belts . . . no need for belt dressing . . . no spattering oil on processed goods.

These are powerful reasons for using Texrope Drives in the textile industry. It will pay you to get this complete story . . . how using Texrope Drives will help you speed up production . . . cut operating costs . . . increase your profits. For full information about this money-saving transmission equipment, call the district office near you . . . or write to Allis-Chalmers, Milwaukee.

Vari-Pitch Speed Changers • Texrope V-Belts • Duro-Brace Texsteel Sheaves • Vari-Pitch Sheaves • Standard Cast Iron Sheaves • Adjustable Pitch Diameter Texsteel Sheaves • 2-3-4 Combination Sheaves • Paraline Automatic Motor Bases • Oil Field Drilling Rigs.

Belts by Goodrich

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN

An Opening for Savings

MAY START IN YOUR OPENING ROOM!

BALE BREAKER TO WEAVE SHED—"Correct Lubrication" is vitally important! Savings may begin right in your opening room with Gargoyle Greases. And the special qualities of Gargoyle Vactra and Velocite Oils will help reduce costly wear and spoilage from "oil throw" throughout your mill.

CALL IN **Socony-Vacuum for**

You'll Profit from these "Exclusives"

☞ **SKILLED LUBRICATION COUNSEL** of a Socony-Vacuum man backed by 74 years' experience . . . the greatest in the Petroleum Industry.

☞ **A COMPLETE LINE** of Lubricants . . . the scientifically correct lubricant for every type of machine you now own . . . or will buy.

Correct Lubrication

NEW LUBRICANTS ahead of new needs . . . developed in close cooperation with machine builders by famous Socony-Vacuum laboratories.

HALF A MILLION CASE HISTORIES to guide our engineers in recommending the right use of these lubricants to earn Lubrication Profits for you.

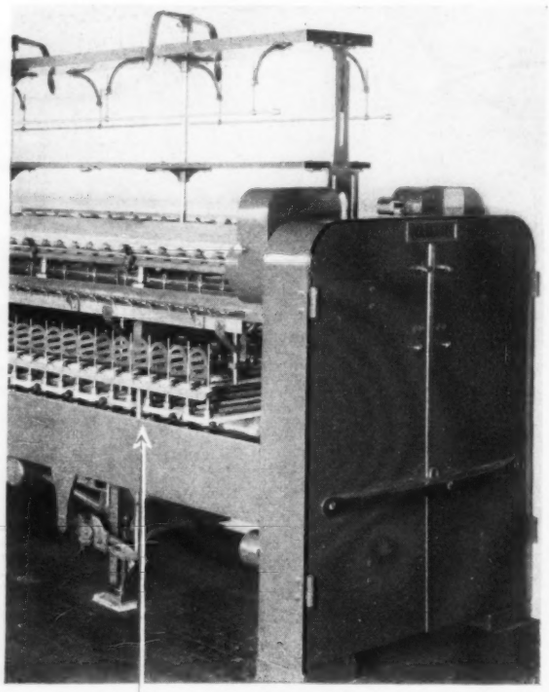
DISTRIBUTION throughout the world. The same high-quality lubricants available everywhere.

• • •

SOCONY-VACUUM OIL CO., INC.
Standard Oil of New York Division • White Star Division • Lubrite Division • Chicago Division • White Eagle Division • Wadhams Division • Magnolia Petroleum Company • General Petroleum Corporation of California

GARGOYLE
Lubricants

CUTLER SAK TAPE



A Deserved Tribute

It gives me great pleasure and satisfaction to express herewith my sincere gratitude to those leaders of the Textile Industry whose continued help and cooperation have aided in bringing Cutler Sak Spinning and Twisting Tape to the prominent position which it now enjoys in the trade.

These men, who have covered more than 5,000,000 spindles in their mills with Cutler Tape, are now realizing a saving of over $1,000,000 annually.

ROGER W. CUTLER.

Scientific Research Brings Practical Economy to YOU!

	Cutler	Ordinary
Break (lbs.)	260	210
Yards per lb.	75	45
Thickness (inches)	.03	.044
Life (months)	20	11
Spindle Cost—5/8"	.0208	.0088

	Cutler	Ordinary
Cost—20 months (spindle)	.0354	.0376
Spindle Speed (rpm)	9850	9700
Annual Power Saving (spindle)	.088	0
Annual Increased Yarn (spindle)	.07	0
TOTAL SAVINGS *(per spindle per year)*	15 4/5c	0

Licensees:
Barber Manufacturing Co.
Krout & Fite Mfg. Company

ROGER W. CUTLER

BOSTON, MASS. GREENVILLE, S. C.

NEW MILL WHITE

made by Du Pont

DULUX

REG. U. S. PAT. OFF.

HIGH-HIDING MILL WHITE

● Du Pont steps ahead again . . . with another DULUX for walls and ceilings. Known as DULUX High-Hiding Mill White, it offers plant operators a combination of advantages which we have seen in no other mill white.

It's the mill white you've always wanted—for it frequently does the job with *only one coat*.

Here is a mill white that offers brilliant whiteness, speed of application, intense hiding combined with excellent spread per gallon. Its speed of application means lower cost at the start—in labor and material needed. Its durability, its whiteness retention mean a longer time between repaintings. You save at the start, and you save in the long run.

Du Pont is proud to offer you this outstanding mill white. It is the result of research chemists' ingenuity, finest quality ingredients, merciless pre-testing (on proving grounds and in actual service).

Du Pont honestly believes, from knowledge of the trade and its problems, that DULUX High-Hiding Mill White will give you the finest possible results at lowest cost.

TURN THE PAGE FOR DETAILS!

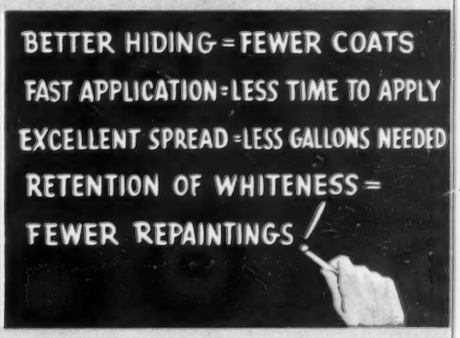
COMBINES ALL THE QUALITIES YOU WANT

Intense Hiding—Excellent Spreading Rate

Du Pont chemists have developed a method of increasing the concentration of high-hiding pigment particles in suspension . . . while maintaining an unusually good spreading rate. This stepped-up hiding is so intense that DULUX often does the job with *only one coat*.

Fast Application

DULUX High-Hiding Mill White goes on *fast*. With one-coat jobs frequently possible, it means the work is completed much quicker than when several coats are needed. In addition, DULUX has extremely easy working qualities which speed the job even more.


BETTER HIDING = FEWER COATS
FAST APPLICATION = LESS TIME TO APPLY
EXCELLENT SPREAD = LESS GALLONS NEEDED
RETENTION OF WHITENESS = FEWER REPAINTINGS

New Lows in Application Cost

You slash labor time (which is usually about 80% of the cost of the job) when you use DULUX—especially if your present paint is in such condition as to need only one coat. In addition, you need buy only enough material for one coat instead of several.

New Lows in Maintenance

DULUX High-Hiding Mill White retains its brilliant whiteness an unusually long time. It is resistant to yellowing, chipping and cracking. It is moisture-resistant, can stand countless washings. These qualities mean fewer repaintings, lowered overhead.

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Once again DuPont sets

A NEW STANDARD IN MILL WHITES

DULUX High-Hiding Mill White is another triumph of modern chemical science. It is the finest mill white we have seen . . . for it combines *all* the properties desired to a higher degree than any other mill white.

Its brilliant whiteness is due to the use of titanium oxide—the whitest paint pigment known today. There is no material which can approach the startling whiteness of titanium.

The super-concentration of titanium oxide pigment is the reason why DULUX has such extraordinary hiding.

The easy working qualities, the excellent spreading rate, the rugged durability and wearing power, the retention of initial whiteness are due to the famous DULUX vehicle—a vehicle developed by Du Pont.

And it's the precise balance of pigments and vehicle that gives DULUX High-Hiding Mill White such outstanding advantages.

A Du Pont Maintenance Engineer will be glad to call and give you a demonstration right in your own plant. For information, just send in the post card attached. No postage required.

MAIL THIS POSTAL CARD TODAY

FOR MORE INFORMATION ABOUT DULUX SUPER-WHITE

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E. I. DU PONT DE NEMOURS & CO., INC.

FINISHES DIVISION, WILMINGTON, DELAWARE

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The ever widening use of STANDARD OIL LUBRICANTS in Southern textile mills—after half a century of service in this field—is due to the fact that *each year* more mill managers discover that STANDARD OIL LUBRICANTS give *longer service*, and *really save* on power consumption.

STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY

UNBRAKO

SELF-LOCKING **SET SCREWS**

With the Knurled Points

All Set for Savings

SELF-LOCKING HOLLOW SET SCREWS

Figs. 1645-41 Pats. Pending

Equip your machines with these screws and you'll be saving yourself all the costly trouble that so frequently results when ordinary set screws lose their grip. Because they can't vibrate loose, no matter how severe the vibration, "Unbrako" Hollow Set Screws prevent breakdowns, avert accidents and save the expense of constant maintenance attention.

Here's why: Once tightened up in the normal manner, the ingenious knurling on the cup points of these screws automatically and permanently locks them in place. Yet they can be easily removed for adjustment and used again and again indefinitely.

These are a real way to save money and prevent trouble—proved by usage in hundreds of mills and under all conditions. So write for our catalog and for samples—see for yourself!

Fig. 1646 Pats. Pending

SELF-LOCKING SQUARE HEAD SET SCREWS

The "Unbrako" Square-Head Set Screw, used and liked by industry for years, also can be had with the automatic self-locking feature provided by the knurled cup points. And, like the Hollow Set Screws, they hold tight, yet are easily removed and used over and over again with the same dependable effectiveness.

These are advantages that all textile mill maintenance men are quick to recognize. Write for details and samples of these too.

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DESIZING COSTS ARE LOWEST

when you use

RAPIDASE

It's not the price per pound that counts! It's the cost of desizing material actually used, minus the savings which it effects in simplifying other processes, that determines the cost of preparing cloth.

The proper use of Rapidase reduces and often eliminates subsequent boiling and scouring operations, with consequent savings in time, machine expense and materials.

Rapidase is readily adaptable for the desizing of cotton, rayon and mixed goods because it acts rapidly, efficiently and consistently over a wide range of temperatures.

WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York City

The New Fafnir "Mechani-Seal" Ball Bearing

QUICK FACTS: Here's a brand new, frictionless, permanent seal that absolutely keeps grease in, dirt out; built integral with the bearing itself, and proved 100% efficient under extreme service tests.

Many a design engineer has burned the midnight oil over the problem of bearing seals for extreme conditions. Heretofore, efficient sealing has demanded: a rubbing member of felt or other material built into the bearing itself, supplementary sealing pieces which also involved rubbing members, or a complicated and expensive external labyrinth assembly.

Seal and Bearing Integral

But now Fafnir has combined a precision ball bearing with a precision-built, frictionless seal into a single unit that is *mounted* as one unit! It's compact; it's unbelievably effective; and it simplifies assembly and disassembly tremendously.

No Rubbing Parts

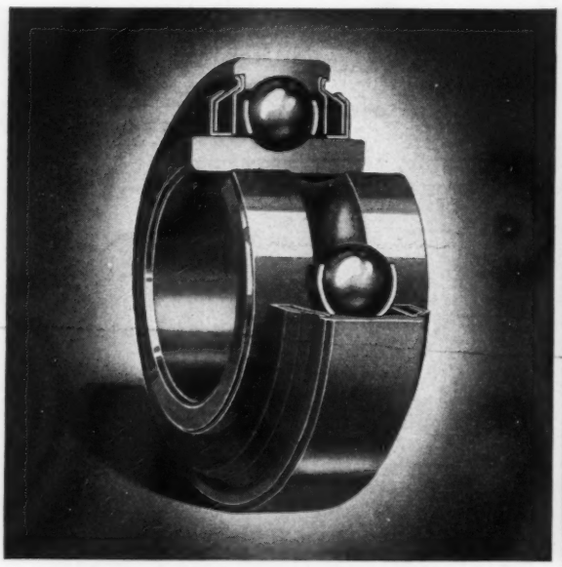
Two steel plate shields form the innermost members. They are tightly fitted to the bearing outer ring. An outer steel plate shield, pressed on the inner ring, clears these inner plates by definite but close tolerances. As the inner ring revolves, this exterior plate acts as an efficient slinger. The inner plates are widely separated, to trap any dust on the way in, or grease on the way out. The outer member is specially corrosion-proofed.

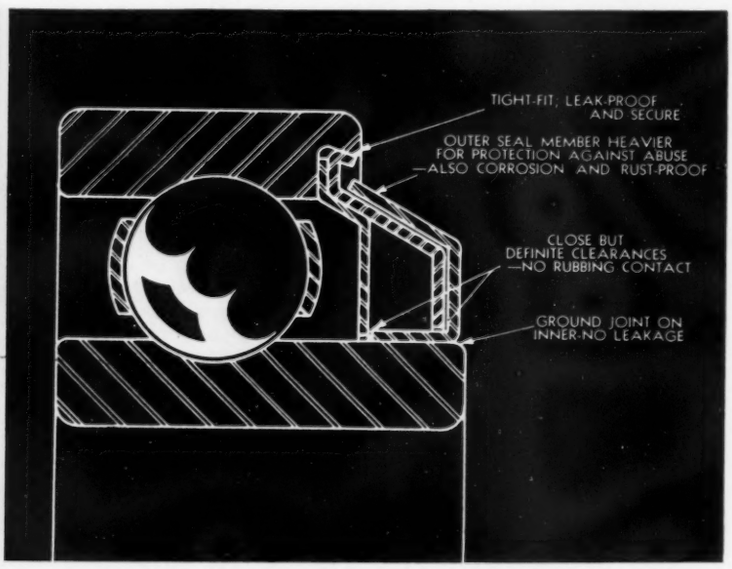
Two Years' Testing

Over two years' experimenting and exhaustive testing are behind the Fafnir "Mechani-Seal" design. Even after prolonged tests in the "dust box torture chamber" the grease within these bearings was 100% free from contamination . . . and they have outlasted other types of sealed bearings, tested at the same time, *three and four to one.*

Write for Folder

The new Fafnir "Mechani-Seal" Folder gives full details on the design and construction of these bearings, and separate Data Sheets give complete dimensional information and sizes available in Single Seal, Double Seal, and Seal-and-Shield types. You should have copies – write for them today! The Fafnir Bearing Company, New Britain, Conn. Branch Offices: Atlanta . . Birmingham . . Boston . . Charlotte . . Dallas.




TIGHT-FIT, LEAK-PROOF AND SECURE
OUTER SEAL MEMBER HEAVIER FOR PROTECTION AGAINST ABUSE —ALSO CORROSION AND RUST-PROOF
CLOSE BUT DEFINITE CLEARANCES —NO RUBBING CONTACT
GROUND JOINT ON INNER-NO LEAKAGE

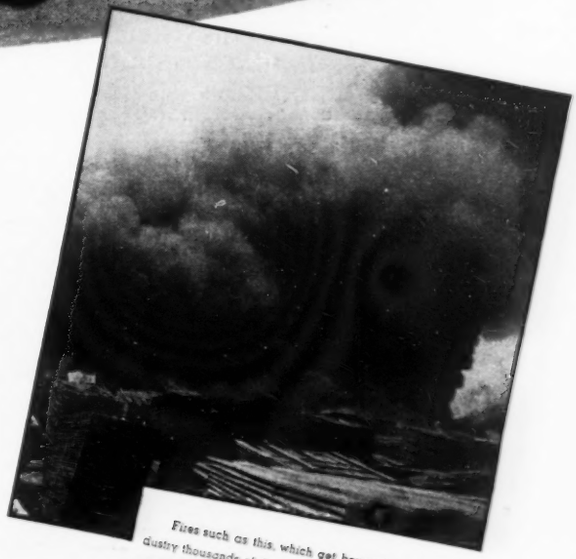
FAFNIR *Ball Bearings*

THE BALANCED LINE . . MOST COMPLETE IN AMERICA

WHAT ABOUT THE *FIRE HOSE* IN YOUR PLANT?

Too Often, the question of adequate fire apparatus is neglected by industrial plants. Many valuable buildings, stock and equipment are left wide open to fire hazards through time-spoiled or insufficient amounts of Fire Hose on hand.

Republic Fire Protection Hose is a dependable, long-enduring safeguard for such emergencies. Manufactured with the same high standards of quality that have characterized Republic Mechanical Rubber Products for years, this heavy duty Fire Hose meets every industrial requirement. Available in either single or double cotton jacket or rubber covered—cotton jackets treated permanently against mildew with exclusive Provar Process, if specified. Discuss the extent of your needs with your Republic Distributor. Republic Rubber Division of Lee Rubber and Tire Corporation, Youngstown, Ohio.



Fires such as this, which get beyond control, cost industry thousands of dollars every year.

CHARIOT
Heavy duty cotton jacket and age-resisting tube to meet industrial requirements.

AERO
One of the most popular brands of Industrial Fire Hose on the market.

RELIEF
With or without label of Chicago Underwriter's Laboratories and exceeds their requirements.

HYDRO
Hydro brand Fire Hose is made to specifications of the Boston Factory Mutual Fire Association.

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Over 12,000 Various Types and Sizes

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VERTICAL RING TRAVELER

Developed to meet the particular needs of the silk and rayon trade in the process of throwing, due to the recent adoption of the vertical ring, particularly of the lubricating type.

By eliminating the pivoting action of the traveler, the traveler is at all times kept in close contact with the groove or device for lubricating the ring and assists in drawing therefrom the lubricant, distributing the same evenly over the entire inner surface of the ring; promoting a longer life to the traveler and a more even twist.

BOWEN *Patented*

VERTICAL OFFSET TRAVELER

After exhaustive tests under actual running conditions, the Bowen Patented Vertical Offset Traveler has proved its worth in the twisting of cords and plys. Based on the true mechanical principle of taking a diagonal position with relation to the ring, presenting a bearing surface over the full width of the Traveler. This design prevents gripping or binding—gives an even tension—an evener rounded product—longer life to the traveler. Send for samples and prices.

BOWEN *Patented*

BEVEL EDGE

The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silks—no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos and kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

PRECISION MADE
SMOOTH OPERATION
LESS EXPENSIVE TO OPERATE

When U. S. Ring Travelers meet your requirements, that means greater efficiency and more money for you—for you naturally want ring travelers precision made from the best materials by skilled workmen; ring travelers in which there is no over-heating, regardless of load or spinning speed—no lost production.

You'll get those qualities in U. S. Ring Travelers. They don't cost any more than ordinary ring travelers because they're less expensive to operate. Standardize on U. S. Ring Travelers, and from their efficiency open up new profit opportunities in your spinning room.

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A Traveler for Every Fibre

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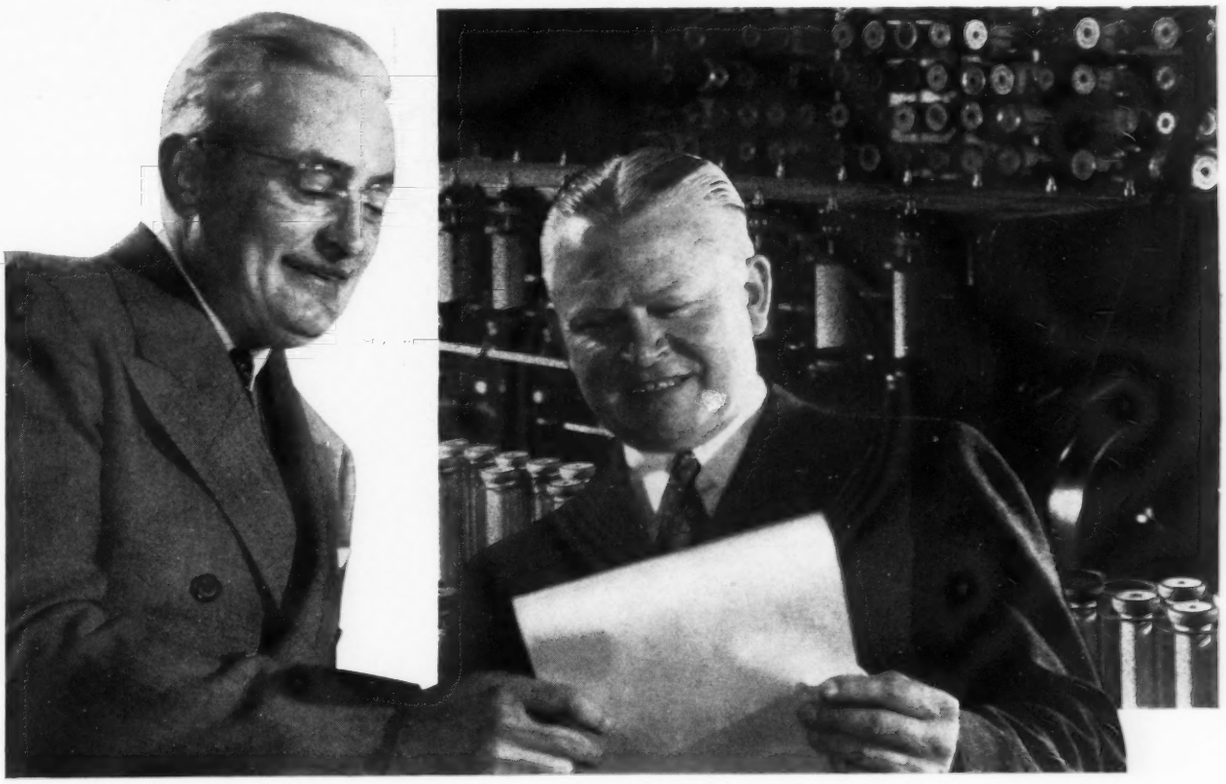
"*Look at this improved production record with* Gulf's higher quality Lubricants"

. . . says this Mill Manager



"We've improved both quality and quantity of production since we adopted the Gulf Engineer's Recommendations"

"THIS production record tells a real story," says this mill manager. "Since we adopted Gulf's higher quality lubricants, we have not only increased the efficiency of our machinery, but have pared down our maintenance costs. *The few cents more we invest in these better oils are returning us a handsome profit.*"

Your machinery may be operating in a fairly satisfactory manner with "run-of-mine" lubricants in service. But if you are not entirely satisfied with your plant production — from the standpoint of quality, quantity, or costs — we suggest that you give special attention to your lubrication.

Ask the Gulf engineer to recommend improved lubrication practice in your plant. He consults tactfully with plant men, and his one aim is to help you increase efficiency and reduce your operating costs through the proper application of lubricants exactly suited to each machine and moving part. You can rely upon his recommendations. They are based on wide experience with the lubrication of machinery similar to yours. The Gulf line includes more than 400 quality oils and greases. These better lubricants are readily available to you through more than 1100 warehouses in 30 states from Maine to Texas. Write or 'phone your nearest distributing point today. . . Gulf Oil Corporation, Gulf Refining Company, Gulf Building, Pittsburgh, Pa.

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A COMPLETE LINE OF MORE THAN 400 OILS AND GREASES FOR INDUSTRY

RESIN OR ROSIN?

Rosin: *A residue from the distillation of crude pine tar—impure—opaque—variable in quality.*

Resin: *A synthetic material such as* RHOPLEX *or* RHONITE, *produced under controlled conditions to meet rigid specifications—crystal clear—free from impurities—uniform in quality.*

In textile finishing, do not confuse rosin compounds with synthetic resins, and particularly with

Rhoplex and Rhonite Resins

Rosin-finishing agents are available, as well as compounds made from a wide variety of highly colored synthetic resins. But RHOPLEX and RHONITE RESINS, formulated specifically for textile applications, will consistently produce water-clear, brilliant, resilient, permanent finishes.

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SERVING THE
Textile Industries

MARCH, 1940
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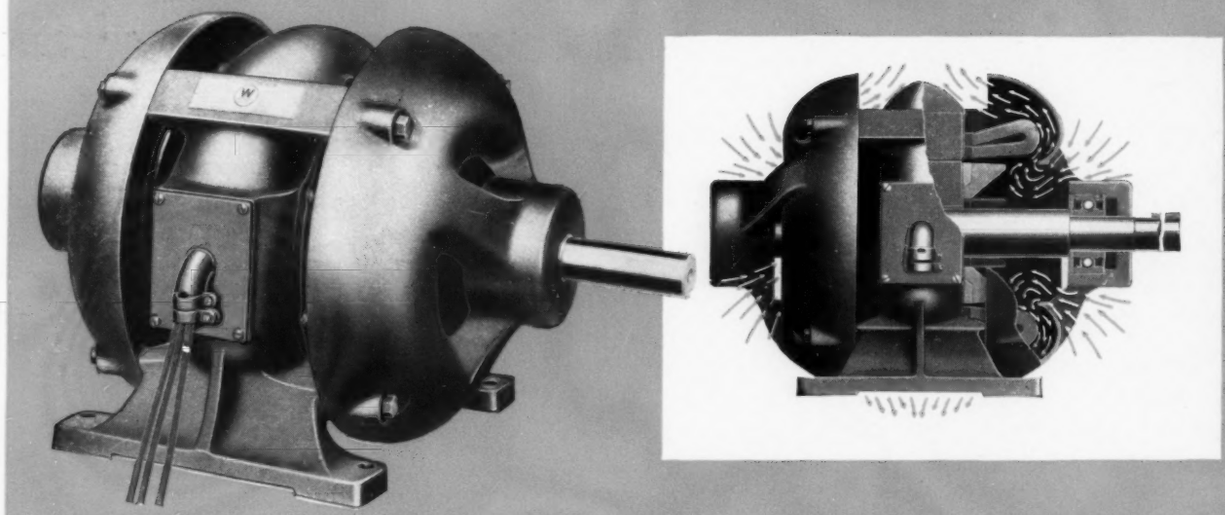
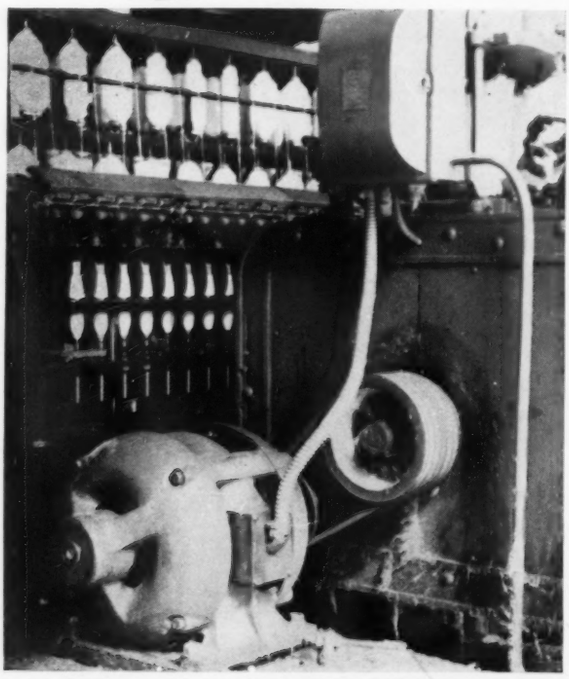


A NEW *Lint-Free* WESTINGHOUSE MOTOR



Here's a motor lint won't smother! It's lint-free — a motor designed and built exclusively for individually driven textile machines — a motor that will *keep* machines running and requires an absolute minimum of care because —

IT GIVES THESE ADVANTAGES:

- Unobstructed Air Path
- Smooth Polished Windings
- Permanently Sealed Bearings
- Streamlined Air Passages

Plus

Sturdy Westinghouse Construction
Proved Westinghouse Performance.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
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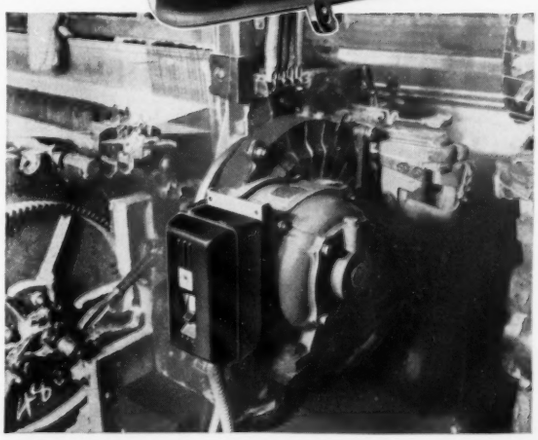
W WESTINGHOUSE ELECTRIC **Westinghouse Lint-Free Motors**

IT'S EASY TO SEE WHETHER THIS STARTER IS on-off OR tripped



New "De-ion" Switch for Motors up to 7½ hp

This new loom switch, the Westinghouse Motor Watchman, has an indicating handle on the front of the starter. It shows the operator or inspector at a glance whether the starter is tripped, on, or off. Smaller, more compact, it is easily mounted on or near the machine. Saves time . . . saves guessing . . . saves space.

You get all these advantages only in the new Motor Watchman

- Westinghouse "De-ion" Arc Quenchers protect contacts from flashovers . . . prolong contact life.
- Snap action bi-metal disc relay protects motor from overload. Resets to correct calibration — nothing to replace.
- Safety interlock prevents accidental contact with live parts.

For complete data, ask your nearest Westinghouse office, electrical wholesaler or industrial agent.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
East Pittsburgh, Pa.

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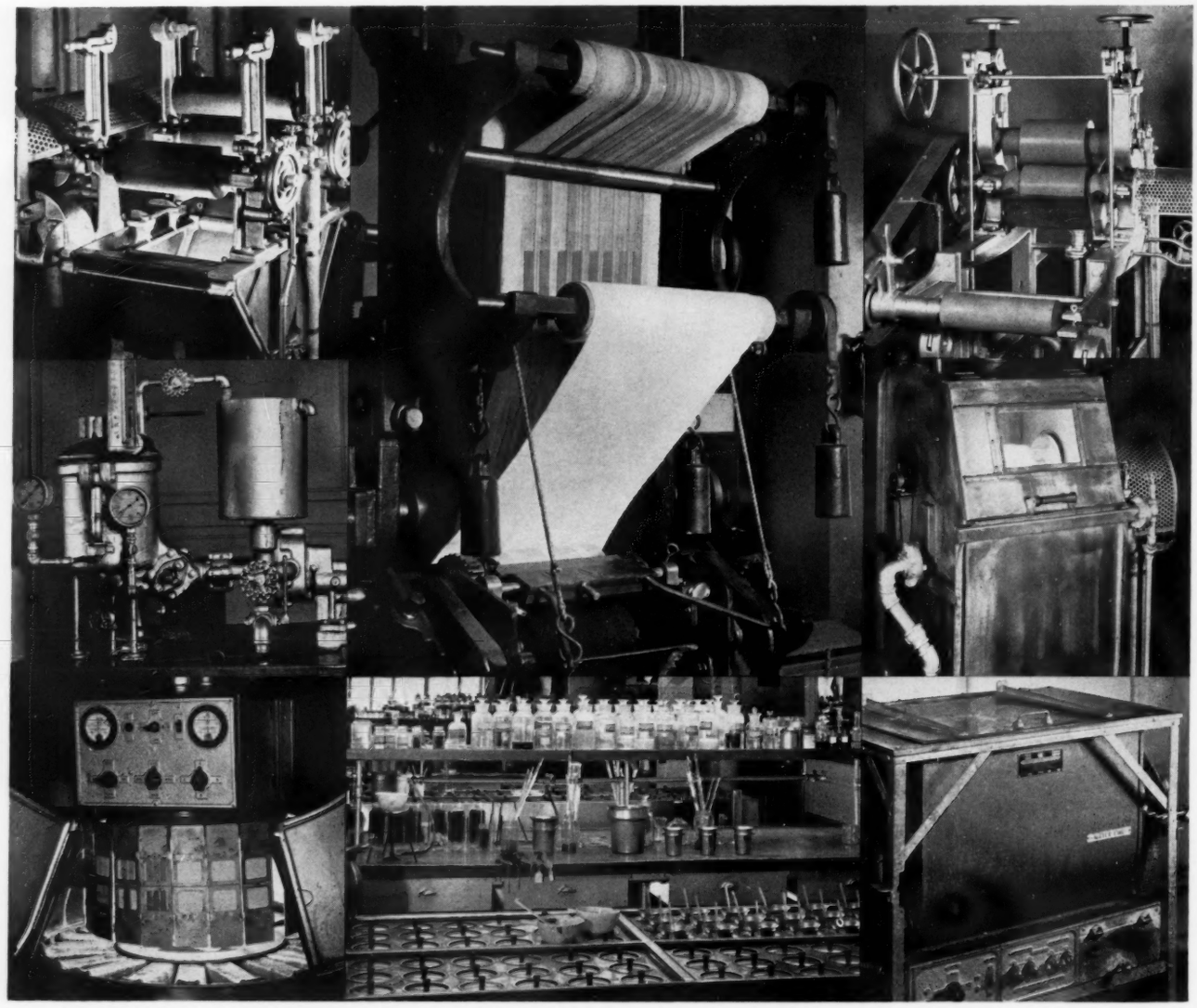
Westinghouse Loom Switch

W WESTINGHOUSE ELECTRIC



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SHORTS AND REMNANTS

Spun Rayon

Among recent requests for copies of our list of articles on spun rayon published in COTTON during recent years are those from the following: KARL GELPKE, Purchasing Department, Kendall Mills, Paw Creek, N. C.; JOHN GANNON, Overseer, Alabama Mills, Inc., Wetumpka, Ala.; G. B. PERLSTEIN, Sales Manager, Pabst Sales Company, Chicago, Ill.; and ROBERT A. LEMIEUX, Textile Chemist, Penick and Ford, Ltd. Inc., New York, N. Y.

In connection with rayon staple fiber and spun rayon yarns, we have compiled a list of 167 southern textile mills that are using cut rayon staple. Copies of this list are available on request. In checking this list against our subscription list, it was found that COTTON has executive or superintendent circulation in 149, or over 90 per cent, of these mills. Of course, we also have a thorough coverage of the heads of departments.

◆

It Was Bona Fide, Mr. Miner

"In your November issue you carried a half-page contribution from an anonymous reader which pointed out the economies possible if belt slippage is eliminated. We should like to have your permission to reprint this contribution in our own house magazine *'The Houghton Line'*. Before doing so, however, we should like to ask you confidentially if this was written by a manufacturer of leather belting or if it was a bona fide letter received from one of your readers."

D. C. MINER

Advertising Manager,
E. F. Houghton & Co.,
Philadelphia, Pa.

(We were happy to permit Mr. Miner to reprint this article in *"The Houghton Line"*. We were also happy to advise him that the article was written by an executive of a well known hosiery mill.)

◆

Straightening Needles

During the past month we have received requests for our pamphlet "Straightening Needles for Full-Fashioned Machines", from STEPHEN KEE, Danita Hosiery Mills, Newark, Del.; E. SCHLEICHER, Van Raalte Company, Boonton, N. J.; and ALBERT E. PARKER, Meridian, Miss. Copies of this interesting and helpful pamphlet are still available at a cost of 20 cents each.

◆

Cross-Indexes

"I have enjoyed reading COTTON for a number of years and have saved all copies. I would appreciate a copy of your cross-index for the year 1939."

C. F. MILLER

The A. A. Shuford Mill Co.,
Hickory, N. C.

"I do not want to miss out on the cross-index for COTTON so I am asking for mine now, before the supply runs out. This makes four consecutive years I have bound."

NELSON N. HARTE

Superintendent,
Merrimack Manufacturing Co.,
Huntsville, Ala.

Old Stuff

"In checking over some old articles from COTTON, I found Part II of an article written by C. H. Baxter on 'Forms of Dyeing and Finishing Full Fashioned Hosiery', from your October 1931 issue. I wonder if you would possibly still have a copy of both Part I and Part II of this article. If you have, I would greatly appreciate your sending them to me."

JOE CALLICOTT

Superintendent,
Se-Ling Hosiery Mills, Inc.,
Nashville, Tenn.

"Can you supply us with copies of the following articles: 'Kier Bleaching of Cotton Goods with Sodium Peroxide' by D. J. Campbell, from June 1936 and 'Bleaching Cotton Piece Goods with Hydrogen Peroxide" by R. E. Rupp from November 1935?"

HERBERT ROSENBERG

American Finishing Company,
Memphis, Tenn.

(We were able to supply Messrs. Callicott and Rosenberg with clippings of the requested articles. Such requests offer further proof that the material appearing in COTTON is of lasting value.)

Meet "Cotton's" Staff (No. 2)

The gentleman above, who was interrupted while dictating by our staff photographer, is C. I. Finigan, in charge of circulation for "Cotton" and the other W. R. C. Smith publications. He came with the company in 1919. Prior to that time he had been in charge of circulation for several newspapers—says he doesn't remember when he wasn't in circulation (work). When Charlie started on "Cotton", the subscribers totaled 4,000; now they are nearly 12,000. He is a stock holder (like many other company employees). Enjoys baseball and fishing, but says the fish don't bite his hook. Main hobby is hunting, but hasn't had time to go since he was 11 years old. He gets credit for the high type subscription agents handling "Cotton". Charlie's right hand man is Bob Bennett and assisting them in servicing the subscribers to "Cotton" are Jack Henslee, Bonnie Webb, Sara Cofer and Johnny Johnson.

Results!!

In December we received a letter from Mr. J. E. Ernault of the Montreal Cottons, Limited, Valleyfield, Canada, in which he asked if we knew of a machine that would strip spun rayon yarn from bobbins. Without disclosing the source, we referred this inquiry to the Terrell Machine Company, Charlotte, N. C., manufacturers of bobbin-stripping equipment. Mr. Wilson, of the Terrell Machine Company, supplied us with complete descriptions of their machines which we passed along to Mr. Ernault. Late in January we received the following letter from Mr. Wilson:

"Going back to the correspondence we had in December relative to our bobbin stripping machine, I know you will be pleased to learn that this morning we had an order from Montreal Cottons for four Type K machines, 2 bobbin box hoists and 2 double-machine conveyor-elevators. I just want to let you know how much we appreciate your co-operation in this matter. I know you will be pleased to learn of the excellent results."

It is always nice to know that we have been of service, and nicer still to receive an expression of appreciation. We are doubly glad this order came through—glad because Terrell Machine Company got the order and because we know the equipment will prove satisfactory to Montreal Cottons.

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Congratulations

"Re your January 1940 number, we want to congratulate you on your article 'Blending Staple to Increase Strength'. We certainly appreciate your efforts in keeping mill men well posted."

JAMES L. TURNER

Superintendent,
Dominion Yarns, Ltd.,
Welland, Canada.

◆

Orchids from "Mr. Mac"

"My copy of COTTON has just arrived and I congratulate you upon this issue and also congratulate you upon the splendid improvements that COTTON is always making. I think you have a fair sense of values and that COTTON is making a distinct and exceedingly valuable contribution to the industry. It covers subjects and gives information that no other textile publication does. The quality of the magazine reflects the splendid qualities and judgment of its editor."

W. M. McLAURINE

Secretary and Treasurer
The American Cotton Manufacturers Ass'n.
Charlotte, N. C.

◆

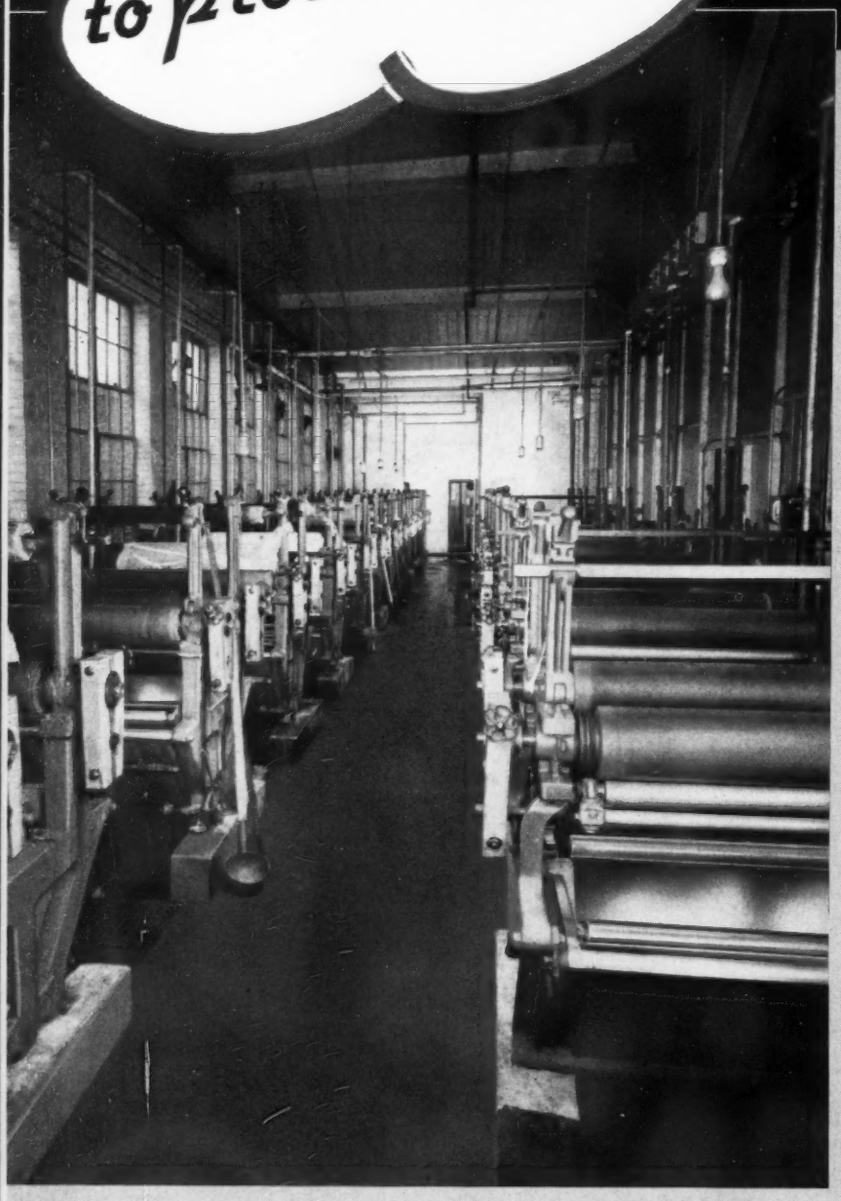
Thanks, Mr. Fanning

"Congratulations upon another year of splendid work done through COTTON. To me it is like meat and bread when considered in connection with my Diversified Occupations' Class in cotton textiles. May I use this method of expressing my own and the Class's gratitude for the excellent articles appearing throughout the year?"

WILLIAM P. FANNING

Co-ordinator,
Textile Education,
Huntsville, Ala.

it costs LESS to produce MORE ...WITH THESE 18 ENDURO JIGS



Dyer ends frequent replacement costs—cuts cleaning time—with this perfected stainless steel

Two years was the average life of the dye becks formerly used in this large dye-shop. Complete relining was then necessary. But even when newly relined, spotting frequently occurred despite the great care used in cleaning.

But now, the 18 jigs shown at left, lined with Republic ENDURO* Stainless Steel, have replaced the old becks. Replacement and maintenance expense have stopped. Lengthy bleaching and scouring operations between color changes no longer are necessary. Spotted goods, or damage from rough surfaces, no longer occur. More work can be handled, in less time and at lower cost... because of the smooth, dye-resistant surface of this solid stainless steel.

You should have all the facts on ENDURO... learn how it can save on equipment all through the textile plant. The complete story can be had by writing Republic, Dept. CO, at Cleveland. Republic Steel Corporation, General Offices: Cleveland, Ohio; Alloy Steel Division, Massillon, Ohio. *Reg. U.S. Pat. Off.

REPUBLIC STEEL
REG. U. S. PAT. OFF

STEEL AND TUBES, INC.
TRUSCON STEEL COMPANY
UNION DRAWN STEEL DIVISION
NILES STEEL PRODUCTS DIVISION
BERGER MANUFACTURING DIVISION

ENDURO Stainless STEEL

COTTON
SERVING THE
Textile Industries

Vol. 104 March 1940 No. 3

Let's Go Visiting!

IN THIS day of pushing for production and striving to cut every expense, it is possible that our operating men are actually staying too close on their *own* jobs.

Those men that have the opportunity to visit among other mills can often see at a glance certain practices in the mills they visit that could be changed for the better—without great expense or without any expense. The visitor may wonder why such practices have not been noticed and corrected by the operating staff of the plant long ago.

The answer is simple. It is the old adage of being so close to the trees that we can't see the forest. On our jobs from day to day we are constantly trying to improve what is immediately before us, rushing along in a hurry-scurry manner to accomplish something with a set-up that may be basically wrong from the beginning.

When we visit other plants, we go there with an open mind, usually without the specific purpose of finding fault—hence our minds are clear and we can see things that would go unnoticed in our own plant, right under our very noses.

We also see much being done that has merit, and it is then that we wonder where we've been all these years that we did not think of it before. This is the value of visiting.

But never think that the visitor to your own mill doesn't come across things that to him seem to date back to the mauve decade. And he'll wonder why a mill man as intelligent as you hasn't caught it long ago.

Which gets us back to our first statement, "it is possible that our operating men are staying too close on their *own* jobs."

We have all noticed that if we put an operative on a job that demands all of his time to keep up, he will continue to perform his duties in the same manner, even if his routine is awkward and cumbersome. But put that same operative on a job where he can have some spare time in which to rest and think, and before long he will discover an easier and quicker way of running his job. If someone in the plant had the time and inclination to watch that operative work, it's a pretty good chance that a suggestion could be made to improve his routine. Or if an outsider walked by he might casually mention a suggestion for improvement. We have seen this done by people who have no technical knowledge of a textile plant.

Supervisors and executives will be in the same boat as the busy operative if they are so crowded with routine work that they have no time for constructive thinking.

This is where the value of visits pays a dividend—both to the visitor and to his host. The visitor comes to the mill with a clear head without having to worry about a multitude of small details—his own plant's problems are forgotten and he has time to observe and criticize constructively—if his host wishes.

We suggest inter-plant visits, but we believe they should be a fifty-fifty proposition. The visitor and the host should have it understood that both are to profit by the visit, with discussion to take place on observations of the visitor—otherwise the host is wasting his time and his company's money.

A visit to another plant is stimulating to a mill man, and he can return to his own organization with a refreshed viewpoint. If we don't get out occasionally, we can't see the forest for the trees.

And, about Conventions

With the approach of the intensive textile convention season, which gets under way this month, it is appropriate to continue this discussion to apply to them as well.

The top executives of practically every branch of textiles meet regularly in convention, and in some of the branches—notably the operating executives of the cotton-textile end, round-table discussion meetings on practical mill topics are conducted.

Recent years, with their various developments, have brought about significant improvements in all of these gatherings. A mill man who has not attended one recently is not qualified to pass judgment on their value, which is consistently increasing. But those who do attend can testify to the inspiration, stimulation of thought, broadening of vision and creation of better understanding they provide.

Let's visit one another more, and by all means plan to participate in the conventions in our respective fields.

Research on Cotton is Planned at New Laboratory in New Orleans

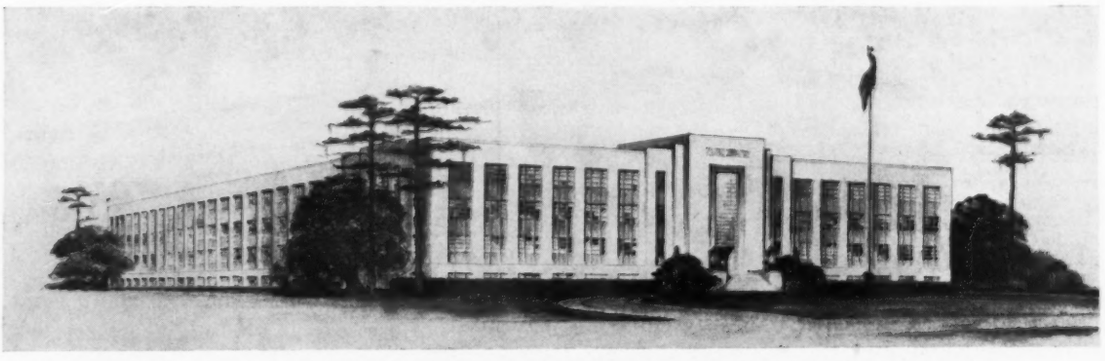
TEXTILE manufacturers should have a definite interest in the Southern Regional Research Laboratory, now under construction in New Orleans, La., by the Department of Agriculture. This is one of four such laboratories established by the Department, in different sections of the country, with a view to research to develop and broaden uses that will provide greater consumption of agricultural products. The laboratory in New Orleans will be devoted to cotton, sweet potatoes and peanuts. One in Peoria, Ill., will deal with tobacco, apples, Irish potatoes, milk products, and vegetables; one in Philadelphia, Pa., will cover corn, wheat, and agricultural waste products; and one in San Francisco will cover fruits (other than apples), vegetables, Irish potatoes, wheat and alfalfa.

Each laboratory will cost approximately $1,000,000; and each will have an annual operating budget of approximately the same amount.

Construction work on the southern laboratory at New Orleans is well under way, and it will be occupied within a few months. Some conception of the physical extent of the laboratory and its personnel may be gained from the fact that the building will be three stories, U-shaped, with a 211-foot front wing and two wings each 306-feet long; it will be equipped for a staff of approximately 250 people.

Cotton will of course receive by far the greatest amount of attention in the New Orleans laboratory. D. F. J. Lynch is the director of the laboratory, and three departmental chiefs have been selected: R. J. Cheatham, of the Department of Agriculture, will head the cotton processing division, with full textile manufacturing equipment; Walter M. Scott, formerly a consulting chemist, heads the cotton chemical finishing division; and K. S. Markley is head of the oil, fat and protein division. All of these men are now fully engaged in this new work, dividing their time, during the construction of the laboratory, between New Orleans and Washington, where their headquarters are in the Bureau of Agricultural Engineering and Chemistry in the Department of Agriculture. Each project will of course be started on a small scale, but each of these department chiefs will build up an organization of specialists in each of their respective departments.

Research on the chemical and physical structure of cotton fiber, and on those inherent properties which govern the utility of cotton, will be conducted in a division of fundamental cotton fiber investigation. The research on chemical finishes for cotton fabrics will be conducted in the cotton chemical finishing division under Dr. Scott. Research in which primary emphasis will be placed in finding new and extended industrial uses for cotton, as well as on clothing and household fabrics, will be conducted in the cotton processing division, under Mr. Cheatham. Some indication of the general scope of the laboratory's plans is found in the following outline, by Mr. Cheatham, of the plans of his own division, quoted from an address by him before the Southern Agricultural Workers Association in Birmingham, Ala., on February 7:



Architect's drawing of the Southern Regional Research Laboratory at New Orleans . . .

"The work of the cotton processing division will be organized into three separate but closely co-operating sections. First, there will be a survey and appraisal section. It will collect, analyze, and interpret various types of technical and economic data which will be needed in connection with the research of the other two sections. Such information will be of great value in selecting the most worthwhile projects on which to work, will provide many clues to directions along which new research might profitably be undertaken, and will be of aid in evaluating the industrial possibilities of the products

of research as they are developed.

"The fabric development section will work in the development of new and improved cotton yarn and fabrics for specific purposes. Research procedure for such work is quite straightforward. Through economic and technological surveys or through suggestions received from various sources, attention is focused upon some specific potential use, like cotton bagging for cotton, or on a fabric to prevent soil erosion in highway construction. The physical properties and cost requirements of the use are carefully studied and then the technical knowledge of the research staff is applied to design and produce a cotton fabric to meet both the physical and cost requirements, if this is possible.

"An important point to bring out here is that we study particularly the requirements of the use itself, and only for the purpose of comparison do we study the properties and cost of the product currently being used—if there is one. The significance of this is that it does not always follow that the unprocessed textile fiber that is cheapest makes the most satisfactory product. For example, jute ordinarily sells for about one-half as much as cotton, yet we found recently that a satisfactory twine for tying mail can be made from cotton, which is at the same time in the competitive price range of jute on a yardage basis.

"A third section will work on the development of new and improved cotton processing machinery and methods of manufacture, with the purpose of lowering manufacturing costs and improving the quality of cotton products. In most industrial uses, like bags for example, manufacturing costs of the fabric amount to more than a third of the cost of the finished product. Price competition is keen in most industrial uses and we know that reduction of manufacturing costs by a few cents per pound can mean a considerable shifting over to cotton from a competing product like jute or paper.

"Finally, the new cotton fabrics and other products of research will be given appropriate tests to determine their commercial practicability, and the information obtained therefrom made available to those who will use it."

Thus it seems there will be a comprehensive, concerted, closely-knit program of research—all carried on with the specific aim of finding new and wider uses for cotton. Research is a method which should be more and more productive of worthwhile results with the passing of each year. In the case of cotton, such a program is long overdue. This will be the first time that the federal government has gone into research on the utilization of cotton and its byproducts in a thorough and aggressive manner, by providing personnel, equipment, and funds anywhere near commensurate with the importance and urgency of the problem of finding new and extended outlets for cotton and its byproducts. The textile mills should be enthusiastically cooperative with the project, if for no other reason than the practical, selfish one that this project will help them just as much as it will benefit the farmer.

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Cobb to Direct Research on Spun Rayon Sizing

The tentative appointment of F. Gordon Cobb, market counselor and textile consultant of "COTTON," as director of the research on the warp sizing of spun rayon and blends of cotton-spun rayon, to be conducted at North Carolina State College Textile School under the auspices of U. S. Institute for Textile Research, has been announced by Carl R. Harris, chairman of the administrative committee for the study and manufacturing engineer, Erwin Cotton Mills Co., The appointment is "tentative" pending completion of the financing of this cooperative research, but as the fund is nearly subscribed the committee is proceeding with plans to start active work.

Mr. Cobb started his career in cotton manufacturing as an apprentice erector of Draper automatic looms in the South; was an overseer of weaving at 19, then successively superintendent of F. W. Poe Mfg. Co., Greenville, S. C., Inman (S. C.) Mills, and in 1919 the Springs Cotton Mills, Lancaster, S. C. He was with the latter for 16 years, advancing to general manager, vice-president and director, then retiring from active mill work excepting for some 18 months spent as vice-president in revamping Pomona Mills, Inc., Greensboro, N. C. He is a life member of the Southern Textile Association and has served this body as president and executive secretary, also receiving its S. B. Alexander gold medal in 1926 "for greatest service to the southern textile industry" in that year.

Mr. Cobb brings to his new duties a broad practical knowledge of the subject to be investigated, the executive ability to direct the work toward its objectives without a waste of time and effort on unnecessary fundamentals, and has associated with him in an advisory capacity a group of scientists and practical manufacturers. As a manufacturer he was noted for his knowledge of warp sizing materials and methods. When most mills were making their own size mixtures he collaborated with two firms in perfecting sizing formulas that are still widely used. When the late Dr. Cathcart was engaged in developing thin-boiling starches the practical tests were conducted by Mr. Cobb.

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Style Show

Dr. Thomas Nelson, Dean of the Textile School of North Carolina State College, has announced that the home economics departments of ten North Carolina colleges for women have accepted the invitation to cooperate with the textile school and participate in the annual Style Show which will be held at Raleigh on April 25. The cooperating institutions are Appalachian State Teachers College, Boone; Elon College, Elon; Flora MacDonald College, Red Springs; Greensboro College, Greensboro; High Point College, High Point; Louisburg College, Louisburg; Meredith College, Raleigh; Peace Junior College, Raleigh; Queens College, Charlotte; and Saint Mary's School, Raleigh. At that time more than 100 young women who are studying home economics in the cooperating institutions will model costumes which they have made as a part of their regular classroom work from fabrics designed and woven at State College by Textile students.

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In February "Textile Research"

Another step in the research on the the recovery and disposal of textile mill wastes, conducted under the direction of Dr. F. K. Cameron at the University of North Carolina, and financed by the Textile Foundation, is described in the February issue of *Textile Research*. It is a progress report of a highly scientific character.

Of more practical importance to textile technicians and researchers is the index of articles and abstracts published in Vol. IX of this magazine which is a supplement of the February issue. Some idea of the comprehensiveness of this index of technical and research articles published throughout the world during the year covered by Vol. IX, and of its value to those desiring to keep up to date in this connection, may be gained from the fact that more than 750 subjects are indexed, with a cross-index coverage of over 1,000.

Applying the Conference Method to Teaching Textile Students

By John C. Fonville

A SHORT TIME ago the writer was invited to "sit in" on and take part in the advanced loom-fixing class at the Callaway Vocational School, LaGrange, Ga. The session, was enlightening and interesting, and entirely different from any vocational class it has been my privilege to attend. In this class the teacher didn't teach—but the students did.

Beforehand, and by popular vote of the class itself, it had been decided that the subject for the session would be "washboard" shuttles. Other subjects were slated for weeks to come, all selected according to the interest and votes of the class. When the class was called to order, the instructor simply announced the nature of the subject, explained briefly the terms "washboard" or "wavy" shuttles, and without more ado *asked the students* what causes this defect on the backside of a shuttle.

A student volunteered that he has found the boxes out of alignment to cause washboarding. The instructor turned to the blackboard and wrote this down. The student then volunteered that in order to correct this naturally the reed and the back box plate should be placed in alignment, adding that a reed-square should be used in so doing. The instructor wrote this opposite the "cause"—thereby giving a cause and a remedy.

Another member of the class made a further suggestion as to the cause, giving the remedy, and others added reasons and remedies while the instructor filled the blackboard. Enthusiasm ran high and each member submitted at least one cause for the washboarding of shuttles. In all, the class listed twenty-one causes and remedies for the washboarding of shuttles.

After the class was satisfied that most of the reasons had been given, discussion took place on each point listed on the blackboard. There were agreements and disagreements, arguments over whether this or that could remedy the defect, detailed explanations by members explaining their theory, good-natured bantering, with the instructor taking no part other than to keep order so that only one person spoke at a time, and occasionally to add his own comments on the subject after the others had finished.

When the class was over everyone seemed to feel just as the writer does, that the washboarding of shuttles is a broad subject, but that they were now better equipped to remedy the trouble—thanks to suggestions from every member of the class and the co-ordination of the instructor.

Later, the instructor advised the writer that this class is conducted by the *conference* procedure instead of the *lesson* procedure, a system of vocational teaching advocated for people of practical experience by Professor T. H. Quigley*, head of the Industrial Education department of the Georgia School of Technology. Reasons for conducting vocational classes along these lines, according to the instructor, are as follows:

The lesson procedure puts the student in possession of definite predetermined information, attitudes or abilities which the instructor possesses, whereas the conference procedure puts the group in possession of the total information, attitudes or ability that the *group* possesses, but which no one member or the leader possesses. The leader so handles the group that they pool their information, attitudes and abilities.

Learners taught by the lesson procedure may or may not recognize that they are learners and that the instructor is their authority on the subject, but by the conference procedure the group recognizes that collectively they are the authority on the subject and that the leader is the co-ordinator of their ideas. Of course, the instructor is at lib-

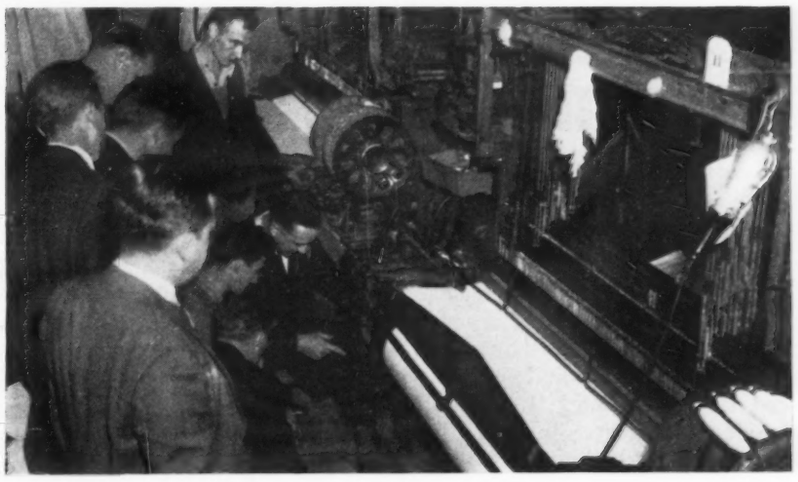
A typical classroom scene, showing how the blackboard instruction method is used in the loom fixing conference class . . . . .

*Professor Quigley advises that he borrowed the idea from Chas. R. Allen, who had in turn borrowed it from Socrates, philosopher, teacher—and drinker of hemlock juices.

erty to add to the discussion.

Instead of the usual steps to prepare the students' minds for the class as developed by the lesson procedure (consisting of informational statements, questions, etc.), interest has already been generated in the student prior to the conference** by his thinking of life experiences in the mill—actual work that he has done—his own successes or failures in correcting trouble. Therefore, beyond the mere announcement of the subject, the step of creating interest has already been accomplished.

**The conference procedure is used mostly on industrial relations subjects. Last year, this procedure was used to train a number of operating executives in the textile industry of Georgia to carry on such conferences.



The class is given first-hand instruction on a vital point in loom-fixing, with demonstration by an experienced man . . . . . .

Pads for Insulating Looms

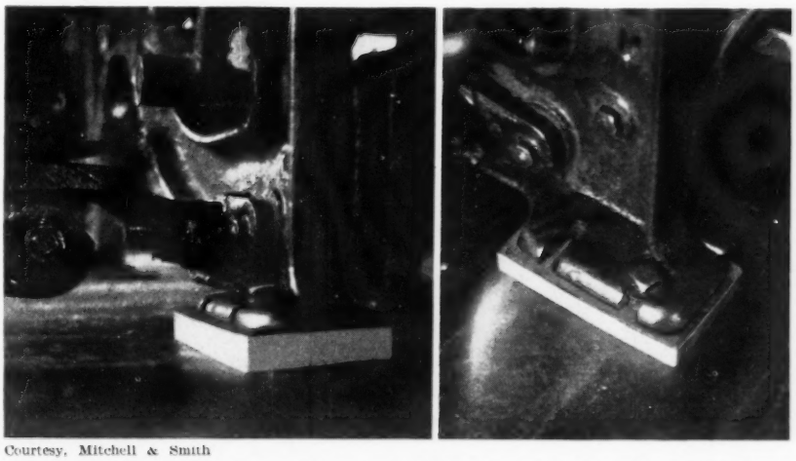
AT THE present several textile mills are running pilot tests and are experimenting with placing insulation material under looms. The primary purpose was to reduce vibration of the machinery, and its subsequent detrimental effect on both the mill building and the machine itself, but it has been determined that the insulation material also reduces considerably the noise and racket of the weave room. At least one installation has been made to isolate the looms from the floor just for the purpose of getting a quieter weave shed—and this has been accomplished.

Though the experiments have not brought conclusive proof that the breakage of loom parts is less when the looms are insulated, mainly because insufficient records have been kept on this particular point, it is reasonable to assume, according to one mill man, that the breakage will be less if the looms are permitted to take the swing and sway with the motion of the crank, instead of being in a stressed condition during the entire picking cycle.

At a southern mill where insulation material is under a number of individual motor-driven high speed looms, the looms are not bolted to the floor. An executive of this mill, while not ready to commit himself on the actual benefits of the insulation, contended that it is more economical to place the looms on the padding without lagging them down than it would be to bore holes in the floor to hold them in place. The use of bolts in connection with an insulation job would defeat the purpose of the insulation material as vibration would be transmitted through the bolts from the machine to the building.

Insulating pads have been tested made of natural cork, and of pressed felt. In the case of cork it is simply a case of raising the loom and lowering it on the cork pad. The pressed felt is usually cemented to the floor and to the loom.

The tests so far in the textile industry have been mostly on loom installations, but it has been pointed out that many other applications, such as cards, spinning frames, fans, etc., could well be so equipped.



Courtesy, Mitchell & Smith

Left, side view, and right, top view, of cork insulation pads in use under looms. It was not necessary to lag the looms down, but this mill is using one lag bolt. The purpose of insulation here was to reduce noise. Vibration is transmitted by bost . . .

Albert Breen to Emmons

Albert Breen has recently become associated with the Emmons Loom Harness Company, Lawrence, Mass., and Charlotte, N. C., as the company's sales representative in the states of Michigan, Indiana, Illinois, Ohio, Wisconsin, Minnesota, Missouri, Iowa and Kentucky. His address is 80 East Jackson Boulevard, Chicago. W. S. Taylor, with headquarters at 171 Madison Ave., New York City, will represent the company in Pennsylvania, New Jersey and parts of New York and Connecticut.

Checking Spindle Speeds

By E. G. Field, of William H. James and Associates

WHAT DATA should be considered necessary in reporting on spinning speeds? There does not seem to be any standard practice. It is customary for someone to ask whether front roll or some other speed is to be taken. In consequence, the answer brought to the office is seldom satisfactory since it usually can be proven only approximately by comparison with previous tabulations of similar data. Oftentimes arguments are produced, someone is sent back to take all of the speeds a second time, and the original observer may be spoken to quite sharply. To avoid this confusion some superintendents and overseers think they personally must take the speeds.

What is required? This will depend somewhat upon the use to be made of the data. In general, no front roll speeds should be taken without the companion data for drum speed and the full identity, thus:

Frame —Number, Description, and Twist Constant
Product—Yarn, Multiplier, and Twist Gear
Speeds —Front Roll RPM and Drum RPM

An example of what data should be taken is presented as Item I in the accompanying table. Why should this data be had and what can be done with it?

The twist multipliers should be checked with the specifications to be sure they have been copied correctly. Item 2 shows how two yarns required correction of the twist multipliers originally reported. In this illustration all changes and additions are shown in italics while regular type is used for figures repeated. (Different colors could be used to make this distinction.)

The twist gears should then be checked. This can be done by use of the twist multiplier and the square root of the yarn number. Their product gives the turns per inch in the yarn. When the turns are divided into the twist constant, the quotient gives the twist gear necessary. Item 3 shows two twist gears could be wrong.

But, it was noticed that one of the twist constants had been reported wrong. So Item 4 makes the correction for one twist constant and one twist gear. At

CHECKING SPINNING SPEEDS

Item	Purpose	Product		Detail		Twist		Front Roll		Drum		Proof			Spindle R.P.M.
		Yarn	Multiplier	Sq. Rt.	Turns	Constant	Gear	R.P.M.	Speed Constant	R.P.M.	Speed Constant	Spindle Ratio	Machine Constant	Drum Speed Constant	
1.	As Reported	8.	4.17			425.	36.	141.		768.					
		16.	4.43			425.	24.	156.		1041.					
		24.	4.78			650.	18.	126.		1117.					
		32.	4.82			650.	21.	105.		1241.					
		40.	4.90			650.	21.	112.		1196.					
2.	Corrected Multiplier	*24.*	4.82												
		32.	4.78												
3.	Computed Twist Gear	*8.*	*4.17*	2.83	11.80	*425.*	*36.*								
		16.	*4.43*	4.00	17.72	*425.*	*24.*								
		24.	*4.82*	4.90	23.62	*650.*	27.								
		32.	4.78	5.66	27.05	*650.*	24.								
		40.	*4.90*	6.32	30.97	*650.*	*21.*								
4.	Corrected Twist Constant & Gear	*24.*	*4.82*	*4.90*	*23.62*	425.	18.								
		32.	4.78	*5.66*	*27.05*	*650.*	*24.*								
5.	Computed Drum Speed Constant for Test Check	*8.*					*36.*	*141.*	3.92	*768.*	.00510	7.529	1335.	.00564	
		16.					*24.*	*156.*	6.50	*1041.*	.00624	7.529	1335.	.00564	
		24.					*18.*	*126.*	7.00	*1117.*	.00627	7.529	1335.	.00564	
		32.					*24.*	*105.*	4.37	*1241.*	.00352	8.533	2042.	.00418	
		40.					*21.*	*112.*	5.33	*1196.*	.00446	8.533	2042.	.00418	
6.	Computed Front Roll RPM by use of Drum Speed Constant	*8.*					*36.*	156.	4.33	*768.*	.00564			*.00564*	
		16.					*24.*	141.	5.87	*1041.*	.00564			*.00564*	
		24.					*18.*	113.	6.30	*1117.*	.00564			*.00564*	
		32.					*24.*	125.	5.19	*1241.*	.00418			*.00418*	
		40.					*21.*	105.	5.00	*1196.*	.00418			*.00418*	
7.	Corrected Drum RPM	*24.*					*18.*	126.	7.00	1241.	*.00564*			*.00564*	
		32.					*24.*	112.	4.67	1117.	*.00418*			*.00418*	
8.	As Corrected	8.	*4.17*			*425.*	*36.*	156.		*768.*		7.529			5782.
		16.	*4.43*			*425.*	*24.*	141.		*1041.*		7.529			7838.
		24.	4.82			425.	*18.*	*126.*		1241.		7.529			9343.
		32.	4.78			*650.*	24.	112.		1117.		*8.533*			9531.
		40.	*4.90*			*650.*	*21.*	105.		*1196.*		*8.533*			10205.

Note: Each item is a successive step. The figures in *italics* indicate repeats while the figures in regular type show the correction or new information.

this point the corrections may be verified by going back to the frame for re-observation.

Before performing the next step it will be necessary to offer two facts derived from the structural detail of the frames. These two facts are presented, thus:

$$\text{Drum Speed Constant} = \frac{\text{Spindle Ratio}}{\text{Twist Constant} \times 3.1416 \times \text{Front Roll Diameter}}$$

$$\text{Front Roll Speed} = \text{Drum Speed Constant} \times \text{Drum R.P.M.}$$

In a later article the derivation of these facts will be explained. At this time use will be made of them.

Item 5 shows the computation of the drum speed constant from the front roll speed and its test check with the computed drum speed constant from the particular frame by use of the formula given. In computing from the front roll speed, division is made by the twist gear to arrive at the front roll speed constant. The front roll speed constant is then divided by the drum speed to determine the indicated drum speed constant for that particular frame. For proof, the drum speed constant was directly computed by dividing the spindle ratio by the product of the twist constant times 3.1416 times the front roll diameter as shown in the first formula above. In the instance shown as Item 5, it is noticeable that none of the drum speed constants did prove out. So trouble must be hunted!

Next, in Item 6 the order of calculation was reversed. The drum speed constants for the particular machines were multiplied by the drum speeds to arrive at the front roll speed constants, and those in turn were extended by the twist gears (previously corrected as was explained) to develop the indicated speeds of the front rolls. A comparison with the reported speeds suggests that some observed speeds may have been set down in the wrong order.

Now the front roll speeds in doubt should be retaken. As shown in Item 7, the investigation disclosed that two of the drum speeds had been unchanged. This correction was made. The computed front roll speeds were then found to be correct.

In Item 8, the corrected and proved data is presented ready for several uses. Production may be figured. If speeds are to be judged, then the spindle speeds will be necessary. By applying the spindle ratio to the drum speed, the spindle speeds are readily calculated for comparison with the manufacturer's table and competitive equipment. Factual standards can be set scientifically.

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Proposed Federal Cotton Stamp Plan Endorsed

Major cotton-selling chain store members of the Institute of Distribution, Inc., group, represented at a meeting held at the Hotel Astor in New York City on January 30, endorsed the Federal Surplus Commodities Corporation's preliminary program for a Cotton Stamp Plan according to John P. Nichols, managing director of the Institute. The FSCC's Cotton Stamp Plan, similar to the Federal Food Stamp Plan, may soon be instituted by the United States Department of Agriculture on a trial basis in several municipalities. Institute aid was given to the FSCC in preparing its preliminary Cotton Stamp Plan by a committee headed by F. W. Binzen, director of merchandising of the J. C. Penney Company and composed of George F. Terpenning, vice-president, F. W. Woolworth Co.; T. J. Burns, director of merchandising, W. T. Grant Co.; F. R. Wertman, vice-president, S. S. Kresge Co.; R. J. Doherty of Sears Roebuck; Harold Lane, vice-president, Lerner Stores Corp., and Sylvan Cole, president of the National Shirt Shops. The proposed program was presented to the Institute meeting by Milo Perkins, president of the FSCC and by Philip Maguire, FSCC executive vice-president. In its present form, it is practically identical in principle to the Food Stamp Plan which is presently in operation in numerous municipalities throughout the United States. The starting date and the identity of the municipalities wherein the Cotton Stamp Plan test may be undertaken have not yet been announced by the Secretary of Agriculture.

◆

Textiles and the Organic Chemicals

Many of the improvements in the manufacture and finish of textiles which have been developed in the past few years are directly traceable to a relatively new and "100 per cent American industry"—the organic chemical industry—it was declared by Dr. C. M. A. Stine, vice-president of E. I. du Pont de Nemours & Company, in a review on the occasion of his receiving the Perkin Medal of the Society of the Chemical Industry.

While most of the results of methods created by research in organic chemistry are well known, both by manufacturers and consumers, the extent to which the textile industry depends upon synthetic chemicals, and the many uses to which they are put, are sometimes forgotten or not recognized, Dr. Stine said.

The latest development in this field, of course, he continued, is nylon, which is creating much discussion, just as did the development of rayon a few years ago. In addition to producing these entirely new fabrics, however, organic chemistry has played an important part in modern methods of manufacturing and finishing those other textiles that have been in use since man learned to weave cloth from wool and cotton fibers.

"The important role played by synthetic dyestuffs in the textile industry is so well recognized as to warrant no discussion," said Dr. Stine.

"Of the numerous other synthetic organic chemicals which find application in the manufacture and finishing of textiles, particular mention should be made of the fatty alcohol sulfates used as detergents. Certain of these materials are quite similar to ordinary soap in detergent properties, except that they function as well in hard water as in soft water. Such compounds are accordingly a boon to textile finishers, particularly in hard-water regions. Other fatty alcohol sulfates, and also certain alkyl sulfonates, find application as wetting agents to facilitate dyeing and other textile operations. Still other related materials are used as textile softeners, to impart a pleasing 'feel' to fabrics.

"Mention should also be made of improved moth repellents, mildew inhibitors of the type of salicyl anilide, and water-repellent finishes. Of particular interest is the recently developed "Zelan" durable water-repellent finish. The base of this new finish—a quaternary ammonium salt—becomes so firmly bound to textile fibers, either chemically or physically, that it is not removed by repeated laundering or drycleaning."

A DEBATE BETWEEN TWO MILL MEN (WITH THE EDITOR AS IMPARTIAL CHAIRMAN) ON WHETHER

End Breakage Can Be Too Low

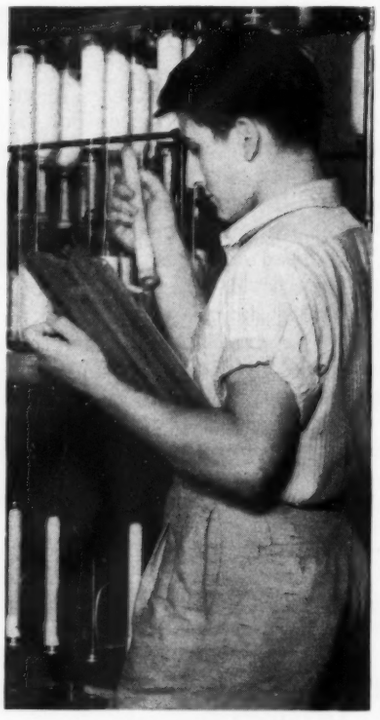
LAST Sunday afternoon we had a visit from John Smith, superintendent of a very large southern mill, and his family. When the ladies had been parked with the children, he and I squared off to some mill talk, and he was telling me of his recently completed installation of long draft roving frames and the results.

I asked him what effect was produced as to ends down on the spinning frames, and he replied that he had no complaint there, and then startled me into jarring the ashes out of my pipe by saying that, "We do not want our spinning to get *below* 40 ends down per 1,000 spindle hours."

I asked him to repeat this and he did. This seemed a little irregular, in view of the universal efforts of the past few years to reduce spinning end breakage to a minimum; yet, in these days of test reports demonstrating that apparently everybody has been all wet about lowering drawing roll speeds and that the higher drawing roll speed we have—up to as much as 600 r.p.m. —the better the yarn breaking strength, nothing should surprise me.

This Man Says "Yes"

Even so, John sensed my obvious surprise in this case, and went on to explain that, in his judgment, provided the maximum speed was not already attained, too low an end breakage indicated that, if the work assignments were correct, the frame was not running up to the highest possible speed. He went on to say that he knows his work assignments are right, and that when his spinning is "running so good" that the end breakage drops below about 40,



then he increases the speed of the frame to a point where he again gets at least 40 breaks per 1,000 spindle hours.

I didn't argue with him, but the thought stayed in my mind until, this morning, Henry Brown, manufacturing head of another large plant, called me on the telephone. We had just sent out a questionnaire asking for information on spinning that involved "cost per million spindle hours". Henry had called to tell me that, despite astronomical Federal budgets and expenditures, he had never gotten accustomed to dealing in millions, and before sending his answer, he just wanted some information on the other answers to this question to see if he had his decimal point in the right place.

While reading to him some of the figures on this point, I also called off some of the reports on end breakage given in the same questionnaire, and he commented—perhaps quite properly—that average end breakage figures mean relatively little because within a given average figure the actual breakage varies so much from day-to-day, hour-to-hour, and frame-to-frame, with various staples and grades of cotton.

But This Man Says "No"

I then told him what John Smith had said to me last Sunday and Henry immediately commented that he thought John was "all wet"—soaking, in fact.

"He may know what he is doing," said Henry, "but for my part, I wish it were possible to run spinning without any ends down. While we will of course hold our speed as near to the standard as possible, I shall go right on trying to reduce my end breakage. A long time ago, we discovered from single-strand tests that the breaking strength of non-pieced yarn averages about twice the strength of pieced yarn, regardless of how the piecing was made, and I don't need to tell you what weak yarn does to your production when it gets to the spoolers and warpers and looms.

"We have recently been able to confirm a suspicion that we have held for sometime, that some of the girls whom we consider generally to be our best spinners are not our best piecers-up, and that the yarn made by some of these 'best spinners' does not run anywhere nearly so good at the spoolers and warpers and looms as it should run in comparison with the yarn made by some of our less experienced girls who, while they may not be 'old-

(*Continued on page* 61)

CLOTH ROOM PRACTICE

By John Dane

(Part One)

As little information has been available on the cloth room, questions will be answered by the author.

IN MANY cotton textile plants the cloth room is a much neglected department. Great stress is usually put upon the operations of the preceding departments of the mill and much money and effort are expended to improve and reduce the cost of manufacture in these departments. Many mills, however, are waking up to the possibilities which the cloth room furnishes for improving the old standard practices and for cutting the cost of preparing the goods for the finishing plant and the grey goods market.

Handling Narrow Goods

Perhaps some of us may profit by reviewing the various methods used to process goods through the cloth room. We will first consider the processing of several types of narrow goods. Narrow Goods:— muslins, broadcloths, jeans, drills, coutils, sateens, gabardines, etc. The treatment of these constructions is very similar so we will group them together.

After these goods are received from the weave room and checked it first becomes necessary to remove the cotton leaf, hanging threads and filling threads which extend outward from the selvages. This is accomplished by brushing and shearing.

The individual cuts of cloth usually run from 100 to 125 yards, though in some plants the lengths of the cuts are much longer due to customer requirements. These are first stitched together on a railway sewing machine and made into rolls of approximately 1000 yards each, or the cloth is run into a large scray capable of holding several hundred yards without undue crowding. In stitching the pieces together, care should be taken to have the seams as narrow as possible.

The cloth is then run in one continuous operation from the roll or scray through the brusher, shearer and roll up machine. The brusher may be either the vertical or horizontal type, and may be equipped with beaters, emery rolls, sandpaper rolls, bristle brushes and wire brushes, or in any combination of these cleaners which may be desired.

The Shearers

The shearer usually has four revolving blades — two working on each side of the cloth. When the seam comes through, the cloth is automatically raised and lowered so that the seam will not come in contact with the cutting blade. By means of fans, a sufficient amount of air suction is produced to allow the remaining hanging threads on the body of the cloth and the projecting selvage threads to be cut off by the blades and drawn into the waste collector. After passing through the shearer, the cloth is made up into rolls of the desired

• This article begins a series of discussions on the cloth room, practices and methods of handling the goods, fixing the machines, reports and records, etc. The first two installments describe the general handling of cloth of various types, while succeeding installments will take up the more technical operation and care of the machines. The articles are prepared by experienced mill men . . . . . .

length usually about 1000 yards—by means of the roll up machine.

It is very essential that all blades, rolls and brushes used in the cleaning operation are given proper care if satisfactory work is to be obtained. Threads should be removed at least twice a day from all rolls and brushes and the cutting blades and wire brush points should be sharpened whenever necessary.

With reference to the sharpening of the wire brush points, this is perhaps done in very few plants, but it has been found beneficial where it has been a customary practice. The increased amount of hanging threads removed by the sharpened brushes is noticeable. The method is very simple. Remove the cloth from the machine, start the machine and hold a wide flat file against the wire fillet all the way across the roll.

If the cloth is to be inspected on an inspecting machine of the inclined type, the roll of cloth is placed behind the machine. The cloth is then run over the table—the cloth moving toward the inspector—and is rolled up on a core suitable for delivery to customer or so that it might be run through a folder. Whenever it is necessary to cut out a serious defect the ends of the cloth are sewed together by means of a portable stitcher. This type of inspecting machine is equipped with a productometer by means of which the yardage of each piece is determined as well as the total yardage. Whenever possible it is advisable to use this method of machine inspection for these grades of goods as the cost per yard of inspection is much less than when inspection is done on flat table after folding.

Inspection After Folding

The following procedure is followed when it is necessary or desirable to inspect goods after folding. The roll is taken from the roll up machine and placed behind the folder. The cloth is then run from the roll into a scray which is part of the folding arrangement and then through the folder. If the folder is not equipped with a productometer it is necessary for the operator to count the yards in each cut of cloth. The counting is done while the folder is in operation. Immediately after removing a folded cut from the folder table, the next cut in the roll is adjusted and the folder started. Operating efficiency is increased by having the cloth from the following roll started into the scray while the scray still contains cloth from the preceding roll. To prevent waste of cloth the stitcher thread should be pulled from the cloth at each seam.

After each cut is counted it is placed on a movable truck until the entire roll has been folded. This truck of cloth is taken to the flat top table where the inspecting is to be done. The inspector proceeds to burl the cloth to conform with the required standards, using a nipper, comb and shear. Whenever oil is found it is removed by washing with soap or by treatment with an oil remover. This method of inspecting usually allows about one-half of the face and the back of the other half of the cloth to be seen by the inspector—provision can be made to see both the entire face and back of the cloth if desired. Second quality goods, short lengths and remnants are placed on separate trucks.

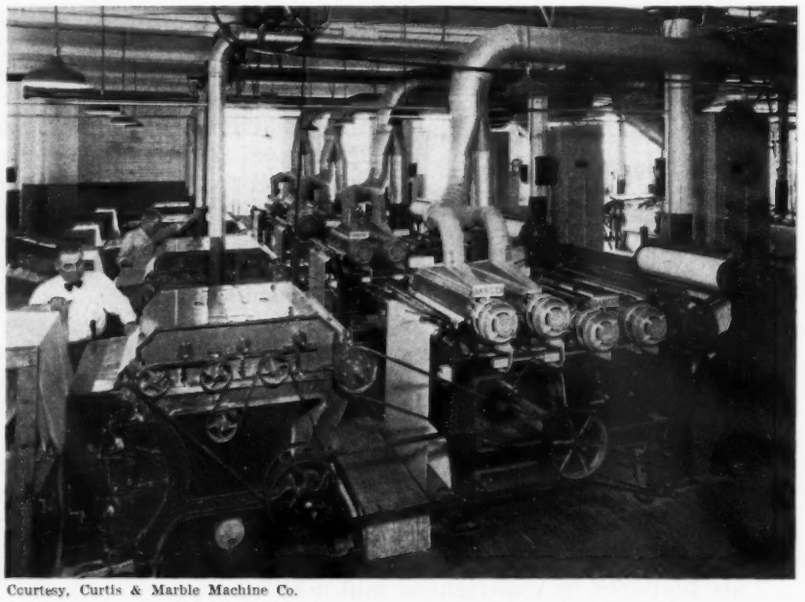
If goods are to be packed "long cuts far as can" the first quality pieces are placed on a truck until the proper yardage has been accumulated. The truck of cloth is then taken to the entry clerk where the individual yards of each piece and the total yardage and net weight of the bale are recorded. After the proper records have been made and the identification tag and yardage slip placed in the bale, it is taken to the press for baling. Hydraulic presses are commonly used for this purpose.

When it is desirable that goods reach their destination in neat and clean condition, the usual method is to cover the bale completely with paper and burlap and bind with either rope or steel straps.

Jeans, drills and single cuts of muslin which are wanted for export trade are obtained by cutting the long cuts into the desired lengths. This is done by the folder man while the machine is in operation on the following cut. Greater efficiency is obtained by removing the double cut from the folder and then starting up the folder immediately on the following cut. The counting and cutting is done by the folder man at a table placed directly behind the folder, with the folder man standing in such a position that he can stop the machine at once if anything goes wrong. If the cutting were done while the cloth were still on the folder, considerable production would be lost in the course of a day.

The drills are usually folded over once and the jeans and single cuts of muslin three folded. The single cuts of jeans and muslin are then tacked (fastened) with strong twine, once on each end of piece.

Stamping is the next operation



Courtesy, Curtis & Marble Machine Co.

Latest type shearing machine used in tandem with a brusher

for export goods. This is done by having the proper stamps (metal chops) set up in the stamping machine. The stamping mixture is carried to the chops by an endless felt apron which passes through the solution contained in the stamper tank. After each piece is stamped the operator places it on a table from which the operator's helper places it on a shelf to allow the stamping to dry.

The yardage of every piece in a bale of export drill or jean is usually uniform. In the case of drilling there are forty yards and for jeans thirty yards, so that the yardage stamp is included in the original stamp as set up in the stamper.

The stamped goods are now taken from the shelves and the requisite number of pieces placed on a truck and sent to the entry clerk for recording.

The goods which are now ready to be baled are put up similar to those for domestic use. Export bales are usually lined with both plain and water proof paper, covered with twelve or sixteen ounce burlap and are bound with either rope or steel straps. Occasionally export drills, jeans and muslins are packed in strong wooden cases which are steel-strapped.

Single cuts of drills and jeans, both first quality and seconds, are often stamped and shipped out for domestic purposes. Single cuts of muslin are also used for domestic purposes and may be either stamped or ticketed as desired.

Flannels (Narrow and Wide)

After being received from the weave room, heavy narrow flannels are usually stitched, brushed, sheared and rolled up similar to the narrow fabrics previously described. The flannel is taken from the roll up machine after being rolled on wooden rolls or cardboard tubes. These rolls usually contain about three long cuts, i. e., about 375 yards.

Napping

The roll is trucked to the napping room and placed in front of the breaker napper. If the width of the napper will permit, two rolls of cloth are run through the napper at the same time. The napper is threaded so that the plain or filling side of the flannel comes in contact with the napper clothing. If a comparatively short or heavy nap is desired, the double acting type of napper is used. This napper usually has thirty-six worker rolls which are divided into two sets of eighteen rolls each, one set forming the pile rolls and the other set the counter-pile. The clothing on all the pile rolls point in one direction and the clothing on the counter-pile rolls point in the opposite direction. All rolls revolve in the same direction, which is opposite to that in which the cylinder revolves.

Inspecting denims. Note counter for determining yards in roll . . . . . .

The kind of napper clothing to be used is determined by the nap desired. When several types of nap are to be run at the same time, it is advisable to run nappers in sets of three—each set composed of a breaker, intermediate and finisher napper. After being given the requisite number of runs on the breaker napper, the flannel which is now on a truck in a flat or pleated fold is placed in front of the intermediate napper and given the proper number of runs. From this napper the flannel is taken to the finisher napper where the desired nap is obtained.

If a long heavy nap is required a single acting napper of fourteen rolls all revolving in the same direction and all wires pointing in the same way is used.

Some types of nap require that the flannel be finished with a felted nap. This is done after goods have been napped by means of a felter napper, which usually has twenty-four worker rolls with all wires pointing in the same direction and this direction is opposite to that of the revolving drum. These worker rolls are covered with a fine close-set wire clothing.

When flannels are of a light construction so that it would be impracticable—as well as unnecessary—to run through brusher and shearer, these operations are omitted. The individual pieces are stitched together and run into rolls of whatever lengths may be desired and then given the proper number of runs on the nappers.

Care of the Nappers

Great care should be taken to see that all nappers are methodically oiled and greased. Parts where oil is used should be attended to twice daily. Greasing should be done at stated periods and careful record should be kept of the greasing of each napper. As proper results from napping depend very largely upon the condition of the clothing, it is extremely important that the wire is carefully watched and ground whenever necessary. The grinding and burnishing of napper wire is done by means of a traverse grinder.

It is advantageous to inspect flannel, which is to be folded, by running it from the truck after napping over a perch into a scray.

The inspector sits in a chair and the cloth passes between the inspector and window or suitable light so that the imperfections are readily seen. The flannel is here burled by the inspector and then passes upward into the scray. From the scray, which is of sufficient size to hold from 100 to 150 yards, the flannel is run through the folder.

Wide flannel (54 inches and wider) may be inspected, yarded and rolled by means of a combination of perch, flat table and rolling-up machine. The inspector sits back of the perch—facing the window—and by means of the usual tools removes the defects from the flannel. The flannel is then run over a flat table on one side of which is attached a selvage trimmer and then passes to the roll-up machine where rolls of the required lengths are produced. The lengths of flannel are sewed together by means of a portable stitcher placed near the inspecting perch. It takes two operatives to run this type of machine—the inspector and another worker to operate the selvage trimmer and roll-up machine. The machine has two controls either one of which will start or stop the entire machine. These controls are placed so that one is convenient for each operative.

Folded flannel which is to be sent to the bleachery is taken from the folder and placed on trucks in bale lots. The yards are marked by pencil on the bottom fold where it is folded over one end of the piece. The selvages are now trimmed by means of a trimming nipper and the truck of flannel is sent to the entry clerk for recording.

Flannel Put-Ups

Double cuts going out to the manufacturing trade are usually put up in two ways.

1. Each piece is taken from the folder, placed on a flat table and folded over once by the folder operator who then ties the piece with two pieces of strong twine placed around the piece a few inches from each selvage. The yards are written with pencil on a corner of the last yard from the folder which the operator has pulled out for this purpose or if preferred the yards may be marked on the back of each piece.

2. Each piece is taken from the folder placed on the table and three-folded by the folder man. A small gum label showing the yards is placed at one corner of the second fold. The tacker then fastens the flannel by means of strong sewing twine. Usually the piece is tacked twice on each end. However, if the piece is very bulky an additional tacking is made near each end of the front side of piece. In addition to the gum label a hanging tag showing the style and yards is also affixed to one end of each piece.

If the flannel is to be stamped or ticketed, the piece is cut on the folder when the folder is equipped with productometer and if not so equipped, the entire piece is removed and cut into two or three pieces of the requisite length by the folder man. The flannel is then three-folded and passed to the tacker who tacks each piece either once or twice on each end.

Flannel is usually stamped by hand—a foot treadle being used whenever a greater pressure is needed. Each chop is pressed against the felt on which the stamping fluid has been spread and then the treated chop is pressed on the proper place on the piece of flannel. The writer understands that a flannel stamping machine is available with a higher lift for the more bulky package, but is not familiar with the operation of this machine. Goods which are to be ticketed instead of stamped have the ticket gummed by use of a gumming machine and then put on the piece of flannel.

A large amount of flannel is now being shipped to wholesalers, jobbers and retailers in the wound put-up. The procedure for winding flannel is as follows: The folded and cut pieces are put on a truck by the folder man. They are then trucked to the winding machine where each piece is wound on a flat cardboard. The tacker then folds in the top length a few inches and tacks each end of piece. Goods are often banded instead of tacked. The goods are now stamped or ticketed and after having the selvages trimmed are ready for the entry clerk.

Flannel is packed by several methods. Flat folded cuts are generally packed in bales. Long cuts which have been two or three-folded are usually packed in wooden cases—a screw press is sometimes used to press these goods into the case. Three-folded goods are usually packed in veneer cases or in cartons. Wide flannel from 54 inches up is usually rolled on a cardboard tube and covered with paper and burlap. [*To be continued*].

Alabama Mill News

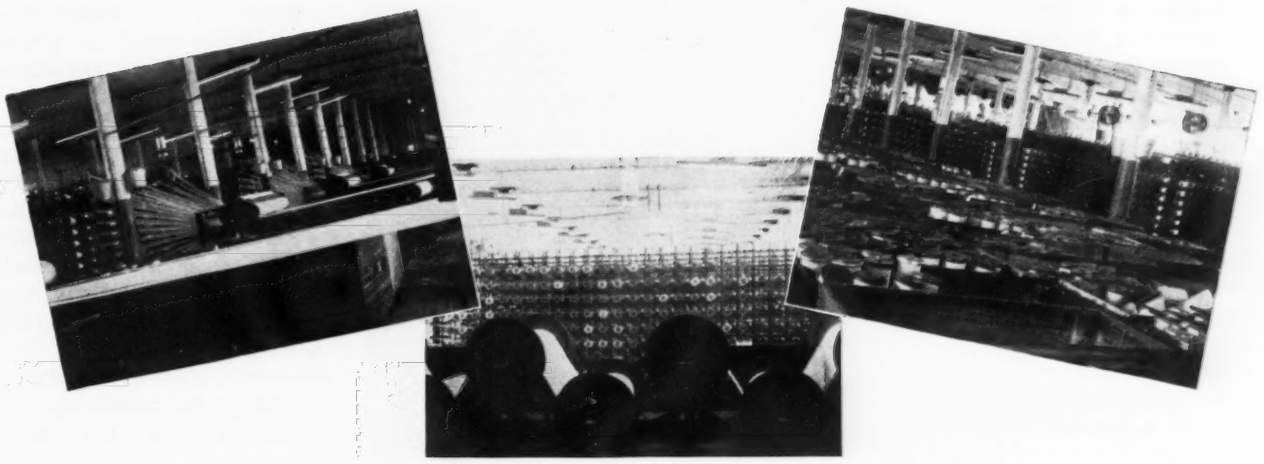
The following changes in the organization of the Alabama Mills, Inc., have been announced by A. H. Randall, general superintendent: R. W. Hollis has been transferred from superintendent of the Aliceville unit to the same position at the Russellville unit, being succeeded by W. N. Scroggins, formerly overseer of weaving at this mill, who is in turn succeeded by Norman Yarbrough, who was promoted. W. D. Hall, Jr., has accepted the position of designer at Aliceville.

Homer Roberts has been transferred from superintendent of the Clanton unit to superintendent of the Wetumpka unit, being succeeded by J. L. King. B. L. Moncrief has been promoted to overseer of weaving at Wetumpka and R. L. Alford received the same promotion at Clanton. P. A. Redmond, Jr., is designer at Clanton.

Pigment Printing

Beautiful color reproduction work comparable to that seen in fine magazines like *Fortune* may soon be possible in textile printing, according to Henry Young, Aridye Corporation, who spoke January 30 before 120 members of the Textile Square Club, meeting at the Wool Club, New York City. Mr. Young discussed the latest developments in printing textiles with pigmented emulsions. "Pigment printing gives the designer new horizons," he said. "It has added new colors to his palette, and now he can put to use a printing medium which reduces the limitations which have bound him in the past."

The speaker showed examples of the results already being obtained with pigment printing in achieving photographic and color effects. This is made possible, he said, by the extreme sharpness of impression which characterizes this method. Photographic subjects showing the World's Fair were used widely during 1939, and now other scenes, including a Hawaiian group, are popular on beach coats, housecoats, pajamas, and similar items.



All photos by John C. Fonville of "Cotton"

Three views of beamer room in a duck mill. Left, front view of direct beamers; center, creel of section beamer in foreground; right, packages stored in boxes for later use on beamer . . .

Preparing Warp and Filling for Duck Looms

By John Middleton

(Article One)

METHODS of preparing warps and filling for the weave room vary considerably. Some of the reasons for this condition include the personal preference of the management, the kind of cloth being produced by the mill and the demands of the trade. Although both duck and sheeting are produced on plain looms, obviously the single yarns in the sheeting will require quite different preparation from that required by the ply yarns used in making the duck. On the other hand there is a similarity in the various methods of warp and filling preparation and we believe that a discussion of some of the more common methods of warping, beaming and filling winding, as practiced in an average duck mill, will be of interest. It is our hope that this discussion will prove profitable as well as interesting as there is a lack of literature on this subject.

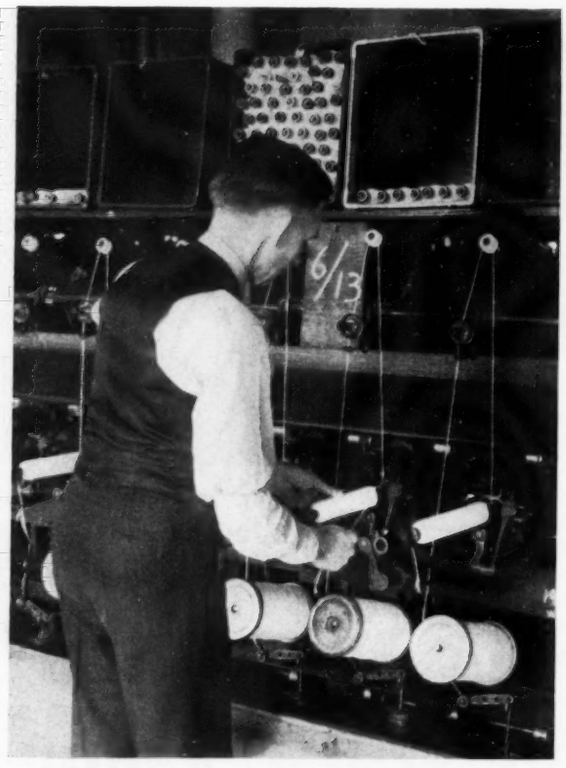
While every department in the mill has to strive for efficiency, the major emphasis in the warping, beaming and filling winding department must be on efficiency and the management of the production, rather than on machine settings, or other items of this nature. The production of a mill, for example, is processed in the spinning room on 150 spinning frames, and in the weave room on 600 looms, while in the beaming and winding room the entire poundage may be put through three or four warpers, five or six beamers and 20 or 25 filling winders. Three-fifths of the production may be warp and will have to go through the five or six beamers. It may require an hour to creel a beamer with yarn that will run out in one hour, thus the efficiency for this particular set will be only 50 per cent. It is readily apparent that constant personal attention of the overseer and secondhand of this department is necessary if the highest efficiency is to be attained.

The department preceding the beaming is the twisting room. In small mills the two departments will probably function as one, under one overseer, with probably one secondhand over twisting and one over the warping, winding and beaming. In large mills it has proved better to have two distinct

• THIS begins a series of articles by a practical mill man on the preparation of warp and filling for duck looms, which though written primarily from experience in a duck mill, will contain many helpful pointers for mills on other classes of goods. This first article covers in a general way the various processes through which warp and filling must pass, takes up the types of equipment used, and provides some helpful ideas on splicing, rewinding and the handling of rayon. Save your copies of the magazines so that you will have the series complete. Questions will be answered by the author if addressed through the editors . . . .

departments. Both these departments require such close supervision and attention to details of production and quality that either department is a full job for an overseer and a second-hand.

For the heavier ply yarns the twister should be designed to produce the largest package possible, consistent with good work. For direct, or creel beamers this is especially desirable, as it is necessary to have the greatest length of yarn without knots that it is possible to produce in order to effect the greatest economies in beaming. It is not always practical to run the comparatively fine ply yarns on the larger and heavier twisters as the longer traverse and the larger rings will cause excessive ends down, so these yarns will usually have to be run on smaller twisters. The twisters should be equipped with yardage counters and will run lengths of yarn as required by the beaming department. When an end comes down on the twister frame, the operative will set out this bobbin and often adjacent bobbins affected by the loose end whipping around, and these pieces will be sent to the beaming department separately for splicing and rewinding.



Filling winder

Following the beaming is, of course, the weaving department, and the demands of the weave room will govern to a considerable extent procedure in the warping, beaming and filling winding department. One mill has a few automatic shuttle-changing looms, a large number of plain, non-automatic looms and several automatic bobbin-changing plain looms. These looms are of different widths and have beam heads of different diameters. Some of the filling is produced on filling winders and some made on filling twisters. The yarns will vary from 3.50s to 23s and from 2-ply to 19-ply, and the number of ends in the warps will range from 120 to 6500. The goods produced are from two inches to 124 inches in width and may weigh as much as six pounds to the linear yard. The lengths of the cuts or rolls of cloth will be from 50 yards to 600 yards in length. A set may comprise 40 to 50 rolls or it may include only one roll, or even a ten yard sample. Yet in spite of these adverse conditions the beaming department is expected to function efficiently and economically.

Equipment Used in Warping, Beaming and Filling Winding

A duck mill, equipped to turn out from 200,000 pounds to 250,000 pounds per week, might have in this department three warpers, one section beamer, four creel beamers (direct beamers), about 200 spindles of filling winders and some splicing and rewinding equipment. Some of the filling is produced on filling twisters. A mill, making single-filled and light ply-filler ducks, sheeting, drills and twills might have three automatic spoolers, two high-speed warpers, also some old fashioned spooling and warping, one section beamer, two creel beamers and four slashers. All the filling for this mill would be produced either on the spinning frames or on filling twisters. Equipment for other plain goods mills range in between these. Some of the mills have some of their equipment especially designed to meet their particular requirements.

Creel or Section Beamer

The question as to what factors determine whether a set of warps shall be run on the creel beamer or on the section beamer is often asked, and the question is not so readily answered. In the first place the section beamer will carry many more ends than the creel beamer, and if it is solely a question of the number of ends involved then after the capacity of the creel beamer has been reached sets with a greater number of ends will have to be put through the warpers and section beamer. If it is not a matter of the number of ends the size of the yarn may be a determining factor.

The very fine two- and three-ply yarns usually run better in the warper, which has, of course, a mechanism for stopping the warper when an end breaks, and then on through the section beamer where the ends are separated by split or lease rods. On the other hand the finer yarns tend to break easily and as the beamer does not have facilities for stopping when an end breaks, warps made from very fine yarns on creel beamers may have many loose ends.

Another factor that must not be overlooked is that it is usually profitable to run all the machines at full capacity where possible to take full advantage of overhead and indirect labor, even though individual sets might be run at a lower cost in certain beamers. As a general rule, however, yarns finer than 10s/3 ply do not run so well in the creel beamer.

Another question that often arises is the number of ends that may be run in a creel beamer. One mill has a creel beamer with a capacity of 3264 bobbins, 5x8 inches. As there must be sufficient space between the bobbins to allow for pulling down ends the spindles are spaced 6 inches, and the rows are 6½ inches apart. The creel has

four sections, with rows of spindles on each side, making an eight-sided creel. The creel is about 6 feet high, and about 18 feet long. The sections are spaced 18 inches apart at the front and 40 inches apart at the back. To build a creel much higher than this would make it necessary to use stools for creeling the top rows, in fact only the taller creelers can reach the top row of the present creel. To make the creel very much longer would permit the yarn from the back spindles to sag, and yarns with comparatively high twists would tend to tangle. Account of problems of space another section seems out of the question. Again, warps (for duck) requiring more than 3000 ends are usually made from fine ply yarns, which as we have seen do not run so well in the creel beamers. (Exceptions to this statement are warps made for certain fabrics for the laundry trade which may have over 4000 ends of 7s/5 ply warp.) It would seem to us that with present equipment the capacity of creel beamers lies somewhere between 3000 ends and 4000 ends.

Splicing and Rewinding Equipment

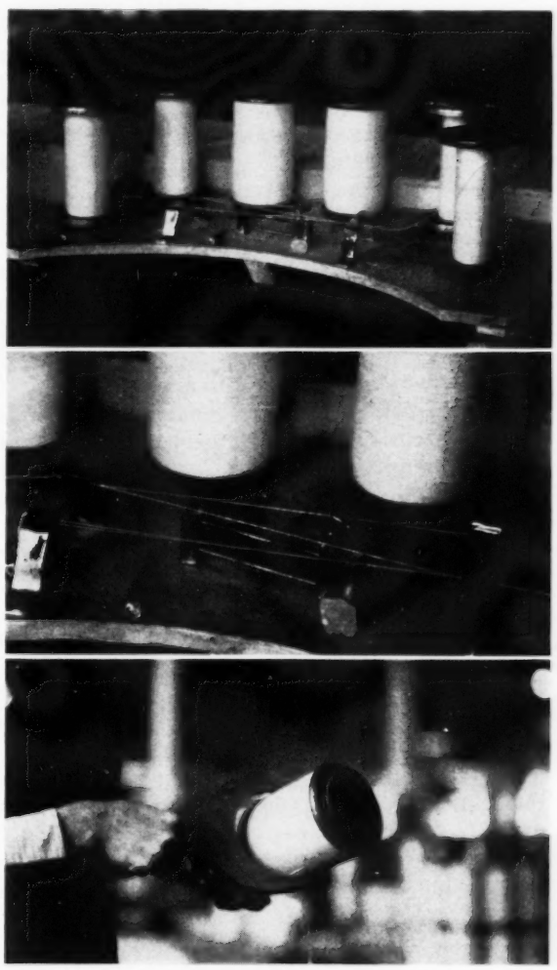
Because of the familiarity of the reader with warpers, beamers and filling winders, or quillers, we have not thought it necessary to describe these machines, but we do think that some discussion of splicing and rewinding would not be amiss.

Single yarns are of course rewound on spoolers, either regular or automatic, or on some form of winder, and are run on spools, cones or cheeses. Ply yarns, in which we are chiefly interested, are usually put directly from the twister to the warpers or creel beamers, the object being to produce the greatest possible length with a minimum of knots, and in fact for certain fabrics, warps without knots must be made. It was formerly customary to rewind all ply yarns usually on parallel tubes, with as many as three or four twister bobbins to each tube. These tubes were put into the warp creel, and creeled as they ran out, similar to creeling a spinning frame. Present rigid requirements with respect to knots make this method obsolete.

Splicing and rewinding equipment is used almost solely for the purpose of salvaging the yarn that has broken before reaching the correct length in the twisting room. It constitutes a burden on beaming and is only profitable when compared with the waste which would otherwise be made. Yarns under four-ply cannot be spliced successfully with equipment now in use, so it is customary to rewind these pieces, tying them together with weavers' knots. The reason that splicing finer than four ply yarns is not practical is that in a three-ply yarn, while two of the plies can be tied together, when the single ends are handled they come untwisted and cannot be properly joined together.

For the four-, five- and six-ply yarns the splicing really consists of splitting the yarn with an instrument resembling an awl, this operation pushing the twist back from the ends, the separated strands being held in place by springs, then tying by the operative of small knots, scattered as far apart as possible. The twist is allowed to run back in and the "spliced knot" is waxed with a paraffin wax.

Plied yarns above six-ply may be actually spliced. The plies are separated, after the twist has been run back in the yarn, by a special apparatus, and the ends are rolled around each other. The twist is then reinserted, the ends trimmed close to the splice and the splice is waxed. An end spliced by a skilled operative, whose hands are clean, and who has been careful to pull off all soiled yarn, is difficult to detect in the fabric.



Upper photo, the splicing device as used by a duck mill; center, close-up of same device; lower, gauging the package after the splicing is finished

Rewinding Pieces

There are a number of methods of rewinding the pieces after splicing. A winder or a spooler may be used. One mill solved this problem by rigging up a series of tables carrying the splicing devices and with a drive shaft with pulleys driving two twister spindles to each table on which pieces are placed after being spliced to another piece. Two spindles are provided for the bobbins that are to emptied, friction being applied to these spindles to prevent the yarn from overrunning and to make the resultant bobbin of yarn firm and smooth. No guide is necessary with this method as the yarn will be wound onto the bobbin just as it was originally wound on the twister.

Obviously this will not be satisfactory in rewinding big-end bobbins or bobbins on which the traverse of the twister has stopped and caused tangled yarn. Such bobbins should be spliced

to a good bobbin and rewound on a spooler so that the traverse of the spooler will guide the yarn from the bad bobbin onto the good bobbin properly. The resultant bobbins of spliced yarn are then used in the beamer creels, a sufficient number being used in each set to keep the stock of re-worked yarn on hand to a minimum; this yarn is usually placed near the selvage. Defects from splicing will be discussed in a subsequent article.

Mention has already been made of the difficulties encountered in trying to splice yarns under four-ply. It is the usual custom, we believe, to rewind these pieces, either on a winder or on a spooler, using weavers' knots. In many cases the finer four-plies may be handled in this way instead of splicing them when such knots are not objectionable in the fabric. One mill uses a spooler for this purpose. Bobbins from the twister room, that is pieces that have come down on the twisters, are put on the spindles and other pieces are tied to them. (Supply spindles replace the bobbin holders with which the spooler was originally equipped.) The pieces on the drive spindles are then filled and doffed to be used as required to prevent an accumulation of this reworked yarn. As in the case of spliced yarns it is customary to use a certain amount of this yarn in each set of warps, creeling it near the selvages. Fabrics to be used for filtering, however, must be made practically knotless, so this reworked yarn may not be used in these goods. In this case, especially if such fabrics are to be made from special yarns, the pieces that break down on the twisters are sorted out according to size and are put directly in the beamer creel and run as far as possible and are then creeled out with other pieces. The yarn that is then left on the bobbins is pulled off and may go into mop waste. It can readily be seen that this materially increases the cost of the goods so every effort should be made to prevent ends down on the twisters; but more about this later.

There has been some discussion as to whether it is profitable to use high-speed warpers in warping ply yarns. If the ply yarn is to be used in a fabric in which knots are not objectionable, then it is possible to wind the ply yarn on a large cone or cheese and run in a high-speed warper. But on the other hand if the fabric is to be made practically knotless, then the yarn will have to be used just as it leaves the twister, and with present methods of ring twisting the size of package is limited. For example a 12s/2 ply yarn does not run very well on a twister with larger than 4½-inch rings, carrying a 4x7 bobbin. Such a bobbin will hold about 1½ pounds of yarn, or about 7560 yards of 12s/2 ply yarn. The regular warpers deliver 60 yards per minute, on the average, thus requiring 125 minutes to run down a creel. In actual practice we have found that such yarn, when run on the 4½-inch rings, will have as many as 15 per cent of the ends down at 5000 yards, and under the most favorable conditions about 6000 yards are all that we have found a bobbin of this kind to hold. This will require 100 minutes to run down on the regular warper. Two creelers can put up and tie a creel of about 400 ends per hour, so if the warpers are on 12s/2 ply yarn, each creel having 400 ends, and if the yarn is 6000 yards in length, then two creelers might keep four warpers creeled. But if the yarn is heavier, and of course correspondingly shorter, then the warpers will have to be creeled oftener, so on an average two creelers should get fairly good production on three warpers, a third person to act as tender, with someone to help doff the completed beams.

Another thing that must be considered in connection with high-speed warpers is the method of taking the yarn from the supply packages in the warper creel. If the package used comes directly from the ring twister then the yarn must be pulled from the "side" as the bobbin is turned on a spindle of some kind. The speed at which the yarn can be delivered to the warper in this manner is somewhat limited. To attain the high speeds of the newer type warpers the yarn is usually taken from the package over-end, and this is not practical under present conditions, with the double-head bobbins used on the ring twisters. We can thus see that the so-called high-speed warpers are not practical to use in warping ply yarns from ring twister bobbins, but for yarns that can be rewound on to cones or cheeses then the high-speed warper should be used.

Beaming Rayon

The beaming of rayon presents problems not encountered in beaming cotton warps. Every part of the machine touched by the rayon, such as the eyes, must be perfectly smooth. The covering of the dresser rolls must be such that a firm grip will be had on the yarn. It is important that uniform tension be maintained on each individual end in the warp, and this is impossible if the roll covering is such that the ends of rayon will slip through, as it is the nature of rayon to do. Tight and loose warp ends will show up in the finished goods as streaks, having the appearance of off-colored yarn.

Filling Winders or Quillers

Filling winding, with present equipment, is at best an expensive process. Production on filling winders is small, making the labor cost high, and in addition to this the overhead is high as a relatively large number of employees are required to "wait on" the tenders of these machines. For automatic bobbin-changing looms it is doubtless more economical to make the ply filling on filling twisters, but for plain, non-automatic duck looms and for shuttle-changing looms filling winders must be used. In some cases rayon filling will be wound on filling winders. The filling winder makes a much smoother package than the twister, and about twice as much yarn can be put on the same size package. The battery hand can wait on nearly twice as many looms with this filling as with filling produced on twisters, but the high labor cost at the winders may offset its advantages; this point will have to be determined by each mill.

It is customary to wind ply filling for plain, non-automatic looms on a cop butt, though for certain purposes it may be wound in cop form without a butt of any kind. The filling winder has a length stop, which stops the spindle when the cop has reached the required length. Otherwise it is non-automatic. The cop of filling produced

by this machine, when properly made, is hard and firm, and unwinds at the loom without looping and without gapping the selvage, assuming, of course, that the shuttle and the loom are properly adjusted. Certain difficulties are encountered on filling winders because of the reciprocating motion of the traverse, and because the end of the cop must run inside a former, or trumpet, and because of weights and tensions necessary to build a firm cop. Defects account of the difficulties will be discussed in a subsequent article.

Recently, filling winders, which are said to be fully automatic, have been introduced. All that the operative has to do is to keep the machine supplied with yarn and empty quills and to remove the full quills occasionally from a box where they fall after being doffed automatically.

The present method of creeling special length yarns in the warper and the beamer creels, while producing warps at lower cost and somewhat better quality than older methods, also makes more waste. With present equipment lengths on the twisters are not uniform, even on adjacent spindles. This condition is aggravated as the length of the yarn increases and as the size of the yarn decreases. For example, a 100-yard sample of 7s/7 ply warp yarn will run out in the creel almost perfectly, while a creel of 7s/3 ply, 4800 yards may vary as much as 50 yards. Tape driven spindles should help overcome this variation, but under actual running conditions nothing, so far as we know, has been found to eliminate entirely the trouble of uneven lengths of yarn from the ring twisters. It has been thought that this unevenness in length is accompanied by a corresponding variation in twist. If actual figures bearing out this theory are in existence we do not know it. Should frames of different makes be used in the same twisting room the constants should be checked very carefully, as a slight difference in gearing may cause a variation in twist, however slight, which might effect the length. Travelers of different weight on the same kind of yarn might have something to do with irregular lengths.

Some of the problems confronting the overseer and the second-hand of the warping, beaming and filling winding department, which we hope to discuss in this series of articles, include the management of the production of the mill as relates itself to this department, the marking of warps and filling, inspection systems, the prevention of bad work, piece work systems, safety and accident prevention, oiling, cleanliness and other general management problems. [*To be continued.*]

Highlights of Textile History

(The following interesting facts, as presented by Cash M. Stanley, a member of the faculty of the textile school at the Texas Technological College, Lubbock, Texas, are verified in "Cotton Spinning" by W. Scott Taggart.)

Travernier says in India muslins were made so fine that "when it is laid on the grass to bleach and the dew has fallen upon it, it is no longer discernible".

Marco Polo wrote a book in A.D. 1298 in which he said that on the coast of Coromandel they produce "the finest and most beautiful cottons that are to be found in any part of the world".

The Greek historian, Herodotus, made reference in his writings to "the wool in India that grows on trees".

A digest of ancient laws believed to have been drawn up by Maru in 800 B.C., made frequent references to cotton both as a plant and as a textile material.

When Samuel Crompton invented his mule, he was enabled to spin 80s and was paid 42 shillings per pound for this yarn.

Daniel Bourne [not Boone] first patented the roller and clearer type card in 1748.

The use of two cones in the fly frame came in 1825; previously only one cone had been used.

No records exist of the introduction of the cotton plant to the United States.

The first opening and cleaning system consisted of a bow-string placed in contact with ginned cotton. By setting the string to vibrating the cotton was opened out into a loose fluffy mass.

The use of a heart-shaped cam in the traverse motion for spinning frames was first introduced by Arkwright in 1775. He was knighted for his many revolutionary inventions and improvements in cotton processing machinery.

When James Hargreaves introduced the spinning jenny in Blackburn, the weavers there smashed his machine and forced him to move to Nottingham.

Houldworth's sun and planet differential motion, the principle of which is still in use in fly frames, was invented over 100 years ago, in 1825.

Arkwright, in about 1772, was the first to make a lap for feeding the card. Hitherto an apron had been used.

Wyatt, in 1738, through the medium of Lewis Paul, was the first to use rollers for drafting.

Roberts' pamphlet of 1641, "The Treasures of Traffic", contains the first written record of the existence of cotton in England. The methods of manufacture at this time were little better than those used in other parts of the world 2000 years before.

The total exports of cotton in 1770 from America to England consisted of 17 bales and 3 barrels.

Nature intended the cotton fiber to serve as a means of distributing the seed. If we let nature take her course, the wind would distribute the seed in every direction.

(The following facts are verified in "Weaving by Hand and Power", by Barlow, and other sources.)

The fork and grid filling stop-motion was invented by Gilroy a hundred years ago, 1839.

In the Museum at Kensington are to be found the oldest remains of woven materials: fish nets fashioned by Stone Age Swiss lake dwellers. ("History and Principles of Weaving 1878"—Barlow).

Regulated by law at one time in England were the domestic life of the weaver, the width and quality of cloth produced, and the price at which it was to be sold.

Commenced between 958 and 960 A.D. were the woolen manufactures of Flanders, to which the world is greatly indebted for their improved methods of manufacture.

"Blankets" are named after Thomas Blanket, eminent manufacturer of Bristol, about 1342.

The ingenious Flemings who immigrated to England in 1369 established the fine woolen industry on a foundation that has not been shaken for over 500 years, but their lives were always in danger as native workmen held them objects of hatred and malice, and called them "cursede forrainers".

In 1519 Cortez sent home cotton fabrics from the looms of Mexican Indians, the first seen in Europe.

For three thousand years Egyptian mummies have been preserved uninjured, "wrapped in linen".

A Description of Vinyon—a New Textile Fiber

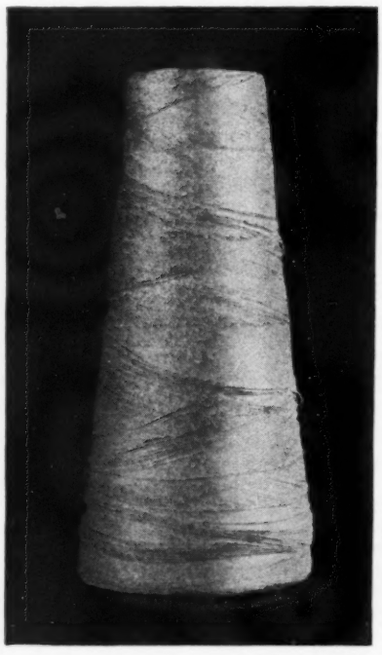
An interesting outline of its source and composition, its manufacture and properties, and present uses.

Men's knitted swim trunks are one of the apparel markets for Vinyon. The trunks above were knitted of Vinyon . . . . .

INTERESTING information on Vinyon, a new textile fiber, has been made available by the American Viscose Corporation, which is now manufacturing it in the company's acetate rayon plant at Meadville, Pa. The following paragraphs are abstracted from "The Story of Vinyon", released in February by American Viscose Corporation, and from a paper on the subject by Dr. F. Bonnet, of this company, before the New York Section of the American Association of Textile Chemists and Colorists.

Chemical Origins. Vinyon fiber is made from a Vinylite resin which in turn is derived from natural gas (or coal), salt, water and air. The evolution of the new fiber is interesting. It begins as a white fluffy powder, which is converted into a textile by modification of the so-called "dry spinning" process. Like all major discoveries, Vinyon fiber is the results of many years of technical experimentation. The story of Vinylite resin goes back still further. The first known record of Vinyl serum, from which the resin is produced, was in 1838 when Regnault observed the formation of a white powder when sealed tubes of Vinyl chloride stood in the sunlight.

The idea of obtaining textile fibers from gums and resins is not new. In 1734 a French naturalist pointed out that silk is only a liquid gum which has been dried, and suggested making silk from gums and resins, but ordinary gums and resins were unsuitable, and it was not until the discovery of synthetic resins that this became possible. With the discovery of the phenol-formaldehyde condensate resin Bakelite, followed by many other synthetic resins, many new properties of these resins became known, but only a very few have been found suitable for spinning into useful textile fibers. Apparently only those thermoplastic polymers are suitable which are straight chain or linear polymers, and the longer the straight chain is (that is, the greater the molecular weight of the polymer) the stronger and more resilient will be the resultant fiber. All of which is best exemplified by the new polyamide resin nylon, and the polyvinyl resin Vinyon.



Industrial sewing thread, one of the new products of Vinyon . .

Manufacture of Vinyon. The new textile fiber is made in two general forms: continuous filament yarn and staple fiber; at present it is in commercial production in sizes including 60 denier/46 filament; 120 denier/92 filament; and 180 denier/138 filament. The fiber possesses a number of unusual characteristics and properties. Chemically, it has inertness, unusual resistance to mineral acids and alkalies and miscellaneous corrosive chemicals. Physically, it has exceptional versatility, lending itself to processing which permits producing yarns with a wide range of tensile strengths and elastic properties.

All steps in its manufacture take place in the rayon plant. The Vinylite resin, in the form of a white powder, is emptied into agitator mixers and dissolved in acetone to produce a "dope" of the proper consistency, clear and with the general appearance of a heavy syrup. This dope is filtered and stored, and then goes to the spinning machine, where the process of spinning is done on standard acetate rayon spinning equipment, substantially the same as in making acetate rayon, except that higher air pressures and temperatures are used, a temperature double that used for acetate rayon being required. After spinning, the yarns are stretched to increase tensile strength and reduce extensibilities; they are then oiled and twisted; and then redrawn on cones and spools for shipment.

The outstanding specialized task in making Vinyon is the stretching process following the spinning. The regularity of denier, tensile strength, elongation and elasticity all depend upon close control of temperature, pressure

COMPARISON OF DRY AND WET TENACITY AND ELONGATION

	Dry		Wet	
	Tenacity	Elongation	Tenacity	Elongation
Degummed silk	4.22	16%	3.40	26%
Viscose	2.00	18	1.00	28
Acetate	1.40	27	0.85	36
Vinyon No. 1	4.00	18	4.00	18
Vinyon No. 2	2.30	25	2.30	25
Vinyon No. 3	1.00	120+	1.00	120+

and speed at this point. As in the case of nylon, this stretching is a vital part in producing a good yarn so as to give it the high tensile strength and true elasticity. The stretched yarn is then set by immersion in water at 150 degrees F. for several hours, after which it is ready for winding.

The same denier tolerances used in rayon yarns are observed for Vinyon yarn. The ordinary yarn is bright, but may be dulled by pigmentation in the spinning dope just as is done in the case of viscose or acetate. The tenacity may be controlled within a range of 1.00 to 4.00 grams per denier and the elongation correspondingly from 120 to 18 per cent, the higher strength corresponding to the lower extensibility and vice versa. Being extremely water repellent the tenacity and extensibility of the dry and wet yarn are the same. A convenient comparison of dry and wet tenacity and elongation of several fibers is given in the accompanying table. A tenacity of 4.00 grams per denier, expressed in another way, is 77,200 pounds per square inch, which corresponds to the strength of machinery or forging steel. Although the yarn is quite water resistant, the surface is readily wet out by the use of wetting agents. Although it is thermoplastic and softens at temperatures above 150 degrees F., it does not support combustion, but if heated hot enough will burn with a very smoky flame.

During textile processing of Vinyon, it is well to run with rather high humidity because of the static which develops. Higher tension in knitting is possible due to the high strength and elasticity. The yarns and fabrics are in no way affected by water, and are exceptionally resistant to acids and alkalis. Aqua regia, 70 per cent nitric, hydrochloric and even hydrofluoric acid of maximum concentration do not attack it at room temperature; the same is true of caustic soda or potash.

The lower aliphatic ketones like acetone dissolve it as do some of the halogenated hydrocarbons. In contact with di-ethyl ether or the lower aromatic hydrocarbons it tends to swell. It is unaffected by gasoline, alcohol and other aliphatic hydrocarbons. It is not attacked by bacteria, molds or fungi: it does not conduct electricity, and is an excellent insulator.

Dyeing of Vinyon seemed at first to offer some difficulty, but this matter is well on the way of solution as a whole range of colors are available. The yarn itself can, of course, be colored with pigments by incorporating these in the resin dispersion prior to spinning.

One way of dyeing the yarn is to use a bath containing solvents and non-solvents for the resin which temporarily swell the filaments. Another way is by means of many types of dyes using standard dyeing procedure modified, of course, as to temperature and by the use of a suitable dispersing agent for the dye. Still another way is to use oil soluble dyes applied from hydrocarbon baths.

The yarn is available in a medium sized package: knotless 11-ounce spools and parallel tubes and 2-pound cones. Throwing of the yarn is not planned at present by the producers.

Uses and Applications. As a first step in development, the new textile is already going into an important group of industrial fabrics, including filter cloth, pressed felts, sewing threads, and twines of various constructions. Other possibilities are bathing suits, curtains, upholstery, fish lines and nets and seines, electric insulation, chemical resistant clothing, awnings, and fusible shape-retaining fabrics. Laboratory work toward development of a Vinyon yarn for full-fashioned hosiery is now proceeding.

The prices range from $1.45 per pound for 250 denier/184 filament, to $1.80 for 60/46 in continuous filament bright stretched. In staple bright, the prices are $1.25 stretched and $1.10 unstretched. The 250/184 and the staple are available only in sample quantities at present.

Can End Breakage Be Too Low?

(*Continued from page* 50)

time' spinners, *do* seem to have the knack of making better piecings. Possibly due to having just been through a period when they were constantly watched and instructed by the overseer and his assistants.

"In this connection, we have recently made a drive in our spinning room to obtain better piecings, by both our 'best spinners' (who as I said are the worst offenders) and our younger ones, and since we have begun this, there is a noticeable improvement in the way our yarn runs in subsequent processes. I would not kid myself or you by believing or saying that this improvement is due wholly to better piecings, but I am convinced that a large part of the improvement recently has been due to this campaign.

"If our experience along these lines is correct—and I think it is—then the fewer breaks and therefore the less piecings we can have at the spinning frames, the better our work will run subsequently.

"I am sure your friend John Smith feels he is working along the right line and if you see him soon I should be glad if you would go further into the matter with him and let me know what he has to say."

(We sent a copy of the foregoing notes to both of these gentlemen. "Henry Brown" replies: "Didn't intend to break into print, but if it will help, and not hurt 'John', go to it." "John Smith" came back with:

("Without any idea of relaxing our efforts to reduce end breakage at all times by improvement in roving and improvement in the mechanical maintenance of the spinning frame, we still feel that an end breakage which is too low is indicative of a job that is too low. This would not apply on certain types of high grade yarns. The final answer to this discussion would be in what is your cost per pound on various yarn numbers? I am satisfied that we could beat the other fellow on this point. I will leave to you the decision as to whether this would settle the argument."

(Further comment from other readers will be welcome.)

"Ten Years of Cotton Textiles"

THE accompanying annual chart "Ten Years of Cotton Textiles", compiled by the Association of Cotton Textile Merchants of New York, presents a comprehensive picture of trends and developments in the industry in the period 1930-1939 inclusive. The following pertinent facts and interpretations from the figures are abstracted from an analysis of the figures by W. Ray Bell, president of the association:

As to 1939, spindle activity was 22 per cent greater than in 1938; cotton consumption was 24.75 per cent greater, being only slightly below the record figure in 1937. The first half of the year was unprofitable; war conditions in September increasing demand and acting as a spark to inflame the pent-up demand for replenishment of trade inventories. "The chief war benefit to cotton goods volume last year was the temporary scarcity and precipitate rise in the price of burlap and other jute products." Substitution of cotton cloth materials represented probably 10 per cent of total burlap consumption.

Exports of cotton goods from the U. S. improved about 15 per cent over 1938, a gain of nearly 48,000,000 square yards, the total being the largest since 1932. Imports practically doubled, being mainly low-priced bleached goods from Japan whose volume in 1939 exceeded 77,000,000 square yards in contrast with 29,000,000 in 1938.

Total U. S. production in 1939 was 9,145,765,000 square yards; allowing for imports and exports provided for domestic consumption 8,890,116,000 square yards—being 67.76 square yards per capita compared with 55.61 in 1938.

With such a domestic distribution, "woven cotton goods demonstrated its ability to support recovery despite amazing gains in synthetic materials. Within the past 10 years, the annual production of rayon broad woven goods has increased from no more than 250,000,000 square yards to over 1,000,000,000." Rayon staple fiber saw an increase in consumption in 1939 of 88 per cent, to a total of 100,000,000 pounds, of which 47,000,000 pounds were imported. However, the cotton textile industry shared in this consumption, in spinning the staple fiber and weaving clothes from both staple and filament yarns. Last April, the Bureau of Census announced that a total of 518,674 spindles in cotton mills were operating on spinning rayon fiber and blends.

A total of 1,000,000 spindles were dismantled by the industry during 1939, leaving the total below 25,000,000 for the first time since 1905. Installation of new machinery, chiefly replacements and additions, was double that of 1938 but less than half of the 1937 modernization.

"Total activity represents the highest annual working time per average active spindle on record, with a gain of 705 hours over the preceding year. During the final quarter, the operating rate exceeded capacity based on 80 hours weekly. Even in that period the lure of exceptional profit opportunities, which distinguished the late 1936 experience, was lacking and over 2,000,000 spindles remained inactive. In June, idle equipment had exceeded 3,750,000 spindles. The existence of competitive disabilities thus indicated now suggests a reduced estimate of slightly more than 23,000,000 spindles with capability of sharing in the work of supplying market needs."

TEN YEARS OF COTTON TEXTILES

Data assembled by The Association of Cotton Textile Merchants of New York from Bureau of The Census reports and information obtained through the courtesy of machinery manufacturers. Cloth production for the non-census or even years and for 1939 has been estimated to correspond to spindle hour activity during the preceding census years.

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
EQUIPMENT											
Spindles in place at beginning of year	34,541,486	33,608,494	32,326,526	31,442,174	30,938,340	30,889,484	29,253,444	27,700,194	26,704,476	25,986,620	24,943,302
Increase or decrease from preceding year	—725,600	—932,992	—1,281,968	—884,352	—103,834	—48,856	—1,636,040	—1,553,250	—995,718	—717,856	—1,043,318
New installation, additions and replacements	251,936	205,068	143,908	348,568	529,840	214,874	469,316	772,724	178,280	349,416	
OPERATION											
Spindles active at any time during year ending July 31st	31,245,078	28,979,646	27,271,938	26,894,860	27,742,462	26,700,946	24,664,428	25,419,110	24,774,004	23,731,050	
Spindles idle during same period	3,296,408	4,628,848	5,054,588	4,547,314	3,195,878	4,188,538	4,589,016	2,281,084	1,930,472	2,255,570	
Average number of active spindles based on twelve monthly reports	27,269,470	25,674,107	23,250,757	24,873,270	25,119,435	23,421,150	23,373,147	24,079,936	22,042,442	22,306,734	
Intermittent spindles (being the difference between average active spindles and those active at some time during year)	3,975,608	3,305,539	4,021,181	2,021,590	2,623,027	3,279,796	1,291,281	1,339,174	2,731,562	1,424,316	
Percentage relation of average active spindles to spindles in place	78.95%	76.39%	71.92%	79.11%	81.19%	75.82%	79.9%	86.93%	82.54%	85.84%	
Spindle hours run	76,702,655,168	77,793,298,853	70,218,347,911	86,580,232,828	75,711,412,882	76,017,361,934	91,773,252,676	95,591,131,816	75,925,187,178	92,559,108,308	
Hours run per average active spindle	2,813	3,030	3,020	3,481	3,014	3,246	3,926	3,970	3,444	4,149	
MARKET											
Production in square yards	6,448,392,000	6,955,391,000	6,278,222,000	7,866,040,000	6,878,579,000	7,135,276,000	8,613,837,000	9,445,736,000	7,502,168,000	9,145,765,000	
Exports in square yards	416,285,000	366,959,000	375,446,000	302,042,000	226,306,000	186,565,000	200,501,000	236,251,000	319,634,000	367,466,000	
Imports in square yards	35,517,000	34,732,000	29,436,000	41,348,000	41,533,000	63,674,000	114,195,000	147,320,000	58,282,000	111,817,000	
Available for domestic consumption	6,067,624,000	6,623,164,000	5,932,212,000	7,605,346,000	6,693,806,000	7,012,385,000	8,527,531,000	9,356,805,000	7,240,816,000	8,890,116,000	
Population at July 1st	123,091,000	124,113,000	124,974,000	125,770,000	126,626,000	127,521,000	128,429,000	129,257,000	130,215,000	131,200,000	
Available for per capita consumption in square yards	49.29	53.36	47.47	60.47	52.86	54.99	66.40	72.39	55.61	67.76	

CURRENT TEXTILE TOPICS

Lull finds the mills on practical footing

WE WOULD hesitate to go about on the idea that the textile industry as a whole has "found itself" at last on the matter of sound operation. Yet the market reports for the beginning of 1940, one of the periods of recession which mark the tides of textile activity, were encouraging to belief on the part of the trade observer that such was the case. Prices measure the policies of mills. An unusually orderly price situation obtained on the recession.

It is true that mills came into the new year still with substantial backlogs, but selling had been slow for weeks. Only spasmodic orders in anything like volume was realized. In such times, the urge of old was to promote orders through concessions. The first six weeks of the year did bring easier values, but nothing like a severe break in the market.

February again found prices of print cloths and related lines below cost of production, in spite of the orderly decline. Mills not only were generally resistant to the trend, however, but many producers were rejecting the bids submitted to them. The signs were numerous that buyers needed replenishment goods and sellers saw good prospects in March.

Seasonal recession assumes sharpness

Considerable of the hesitation in selling of cotton gray goods undoubtedly was due to the seasonal recession in industry at large. This was naturally anticipated, but it assumed a sharpness that was not expected, albeit this may be only another demonstration that the swings in economics are like those of the clock pendulum. In other words, the swing downward had something of the intensity of the autumn rise.

This unexpected acceleration of the recession, on the other hand, led to the conjecture that the movement downward would run itself out the sooner. Allowing for the continual uncertainty affecting the outlook from the standpoint of international relationships, the domestic situation has remained fundamentally propitious. The confidence in ultimate good business for the year 1940 has held during the lull.

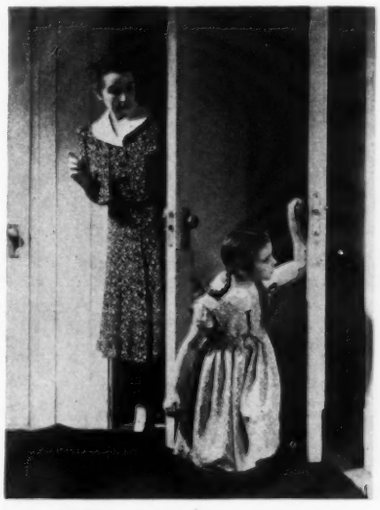
Outside circumstances are of vital consequence to the textile manufacturing industry, and the prevailing confidence through the first two months of the year was encouraging to mill men. The uses of cotton products are so manifold and the ramifications of their distribution so widespread through the whole economic fabric of the country, it takes a well adjusted forward movement to give a balanced prosperity to the mills.

Large consumption for year forecast

Around the middle of February, merchants in the primary market for cotton goods were exhibiting their confidence by prediction that consumption would come close in 1940 to the 9,100,000 yards estimated for 1939. These textiles not only were promised a well distributed demand through the activity of general industry together with consumer goods, but cotton cloths were priced favorably for competition with such lines as paper products.

Cotton also is holding its own in the battle of the fibers. Rayon and other synthetics are making steady advances from year to year, yet the natural fiber of the South retains its place of high value through economic advantage. On the figures of the *Rayon Organon*, the poundage of cotton consumption in 1939 was 3,626,700,000. This figured at just under 80 per cent of the poundage of the five textile leaders: cotton, rayon, wool, silk and linen. It was 25 per cent above 1938 cotton consumption, and only 1 per cent short of the all-time high (3,657,100,000), in 1937.

Contributing in no small measure to the heavy consumption of cotton last year, was the demand for industrial constructions. In the early part of this year, reports from the goods market indicated that fabrics used by the heavy industries held the best position in unfilled orders and stocks among mills.



Courtesy, American Viscose Corp.

A daytime dress of printed Crown Tested rayon with bolero, and a child's rayon crepe dress printed with dotted swiss separate guimpe blouse . . . . . .

Three-shift running reported moderate

Perhaps one of the big reasons why disastrous competitive selling did not hit the market early this year was that resumption of the third shift in the fall spurt did not become rampant. Around the middle of February, mill men were maintaining that less than 15 per cent of the looms engaged in print cloth production were being run three shifts. Low prices apparently were due more to selling for covering payrolls than demoralization from excessive production.

It would be hazardous to venture whether or when the third shift may follow the dodo into extinction. We can hope, however, that the climax of its evil which was reached and recognized a year ago may prove to have been the deathknell of such operation. The need for such elimination was realized before the New Deal was inaugurated. The small minority kept it alive then and, apparently, makes it survive today.

One thing about it is certain. The idea of eliminating the third shift has to precede the action. Last March the idea was bruited about and in the summer a concerted move toward sound regulation of production was inaugurated, although unfortunate circumstances developed because of monopoly laws. If the action cannot be taken collectively, it can be invoked individually. Its efficacy has been demonstrated.

Notable cotton consumption

January started off with signs of fulfillment of predictions of heavy cotton manufacture this year. The consumption of raw cotton, reported by the Census Bureau at 730,695 bales, was the largest monthly total for the first part of the year—exceeded only by the 767,942 bales of March, 1937—in the history of the industry.

This unusual consumption may be

significant of a new status for the cotton manufacturing industry. Undoubtedly it reflects the best distribution of business in cotton textiles for many years. If the estimates of a low percentage of mills on the third shift prove to have been true, these large figures will be encouraging for sound operation by the mills.

Prices of raw cotton and yarn had a setback during January, but not a severe reaction, while the first half of February brought a stabilizing tendency. The spot price of cotton in New York declined from 11.66 cents on December 13 (the peak for recent years) to 10.67 on January 23. It passed 11 cents again in the first week of February.

New England Mill Situation

TWO MONTHS of the year passed with the specialized branch of cotton manufacture in the northeastern states affected by general uncertainty, but latent confidence obtaining. Unfortunately the gradual pressure of several slow months in general selling of cotton goods worked values down once more below cost of production in fine as well as coarse cloths.

Mills were still making heavy deliveries on orders booked in the last quarter of 1939. Around the middle of February it was noted that mills continued to have backlogs for good operations and that these generally were not due to begin running out until March. Yet some mills were needing replenishment business and combed goods manufacturers were preparing for new curtailment if orders did not develop.

Strangely enough, said one report, this was regarded as a bullish development by buyers, who warmly commended these manufacturers for their determination to keep production in line with consumption. The sentiment prevailed that curtailment would strengthen the price structure and prevent anything like demoralization of the market.

New phase develops on the third shift

While from a national standpoint the problem of the third shift has seemed in process of solution, it has taken a new turn in New England, by reason of action in Massachusetts. The Bay State long years ago, by legislative pressure, created mill conditions that were based upon social welfare, but prejudicial to the cotton textile industry of the State under the free competitive system of the nation. That situation is now realized.

General sentiment today in Massachusetts remains adverse to the running of textile mills on three shifts, but community spirit has come around in recent years to the point that something must be done for the support of industry threatened by competition of sections which work on different standards. The state, pending advance of national standards, is committed to concessionary measures.

Along in January the commissioner of labor in Massachusetts, James T. Moriarty, called a conference of textile mill men and labor leaders, because many mills in the previous three months had been running three shifts and "the textile industry has started to give me a lot of worry". He threatened to re-impose the law which prevented employment after 6:00 P. M., a concession of a few years ago being suspension of that law.

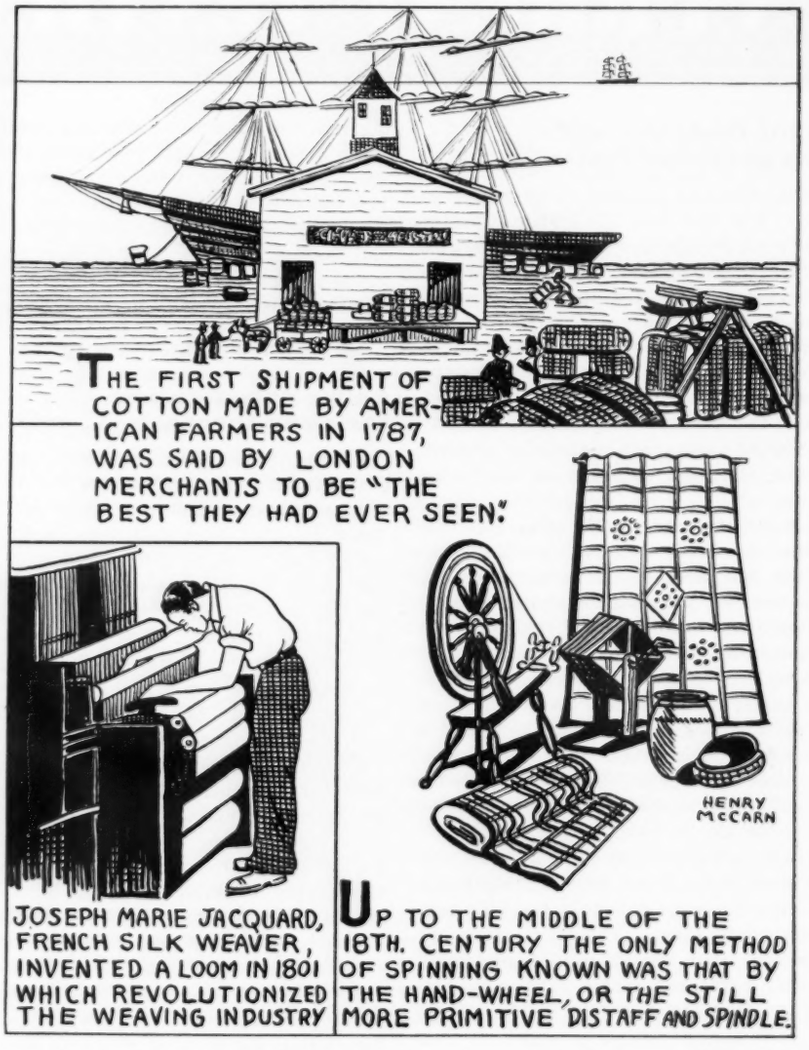
However, he suggested a committee to recommend a workable policy. The outcome was another concession, allowing operation of the third shift in cases where mills stand to lose substantial orders to other states unless they operate on such basis. But a stipulation was also made that the mill operators work for a movement to effect a national agreement for two shifts in the mills.

Pequot Mills launch educational program

Last year the management of the Pequot Mills celebrated its one hundredth anniversary. Timely in conjunction with the foregoing program of the state in support of the textile industry, the Pequot Mills and Danvers Bleachery have launched an educational series of statements to inform the communities of Salem and Peabody (where the plants are located) of conditions national, regional, state and local that affect the company as an employer of workers, payer of taxes and purchaser of supplies.

One statement says that "Pequot wishes to make it clear at the start that it recognizes the definite responsi-

TEXTILE HIGHLIGHTS, by Henry McCarn


THE FIRST SHIPMENT OF COTTON MADE BY AMERICAN FARMERS IN 1787, WAS SAID BY LONDON MERCHANTS TO BE "THE BEST THEY HAD EVER SEEN."
JOSEPH MARIE JACQUARD, FRENCH SILK WEAVER, INVENTED A LOOM IN 1801 WHICH REVOLUTIONIZED THE WEAVING INDUSTRY
UP TO THE MIDDLE OF THE 18TH. CENTURY THE ONLY METHOD OF SPINNING KNOWN WAS THAT BY THE HAND-WHEEL, OR THE STILL MORE PRIMITIVE DISTAFF AND SPINDLE.
HENRY McCARN

bility of management. Further, that this management acknowledges the extreme importance of steady employment and decent wages to any industrial community. It recognizes the importance of modernization if the mills are to continue as going concerns. It has and will keep these mills on a highly efficient basis.

"But beyond all it can do, management is at the mercy of competitive conditions. Granted continuance of friendly interest in the mills by the communities and help in meeting our local problems, Pequot management can assure all concerned that it will do its part to maintain these mills as sources of employment at decent wages."

Hopeful attitude toward the year

Cotton merchants, reflecting the mill situation, are generally hopeful toward the year in spite of the uncertain start. There is no over-confidence in the outlook, however, and some textile interests have been citing outside conditions as fraught with uncertainty for industry. Among these have been mentioned the ever-present quandary about the war and the unpredictable influence of politics in this year of a Presidential election.

Consumer goods demand is the touchstone of success or otherwise for these northern mills. While the broadening of the market during the past six months for cotton goods in general has created a better all round situation (a by-product of recovery which has included the heavy industries), that is only indirectly of benefit in this region. The demand for cloths for industrial purposes is a stabilizing influence, through easing the pressure upon other lines for a market, but an outlet for other production than that of the fine goods mills here.

New England Mill Notes

Wamsutta Mills, prominent unit of New Bedford, last year established an all-time record for sales of its sheets and pillow-cases. The volume was 11 per cent greater than in 1938 and four per cent above that in 1937.

Merrimack Manufacturing Company of Lowell is reported to have made a net profit last year of about $335,000. This followed a net loss in 1938 of $589,320. Wages and employment have increased at the plant of this concern. Expenditures for the plant in 1939 aggregated about $200,000.

Consumption of cotton in Rhode Island mills last year is figured to have been probably the largest since 1929. Employment was approximately 16 per cent larger than in 1928.

"THE SITUATION" as seen Across an Executive's Desk

February 19, 1940

DURING the past month we have been faced with a very unusual situation in the cotton-textile business as mills appear to be operating on an unusual scale, but with constantly decreasing volume of sales. Mill consumption apparently has continued at a high rate despite local shutdowns and enforced curtailment in some portions of the South due to the freeze and excessive cold weather.

Actual consumption of cotton during the month of January totals approximately 800,000 bales—a new high record, which brought total consumption for the first half of 1939-40 season to more than 4,100,000 bales against 3,400,000 bales for the same period last year and a ten-year average of about 3,000,000 bales for the same period.

There is some evidence at this point that there will be a slackening in operations as mills hope to balance their operation schedules and production schedules with sales demand, and the expected buying period of January has not yet materialized.

The unfinished cloth market activity picked up a little as the prices sagged, but even at that the week ending February 10 showed that the mill output was somewhat above the sales for that week. At the same time cotton mills have continued to reduce their backlog of unfilled orders, and trade reports have indicated some increase in stocks of unsold cloth. Finished goods sales were small.

Courtesy, American Viscose Corp.

Mrs. Roy Fleming, of Hot Springs, Ark., winner of the National Retail Dry Goods Association title of Mrs. Typical Customer this year, watches a tensile strength test given a Viscose rayon fabric at the Better Fabrics Testing Bureau . . .

The seasonally adjusted index of mill activity for the week ending February 3 was 136 per cent of estimated normal against 143 per cent the previous week and 118 per cent a year ago. The index of general business activity was 102 per cent for that week compared to 103 per cent the previous week and 90 per cent for the same week in 1939.

And so we see that sale business is better by at least 10 per cent than this time a year ago and 20 per cent better in the textile business. We seem to be facing a tug-of-war between buyer and seller, with textile sellers as determined to maintain their prices as buyers are reluctant to pay them. Mill agents seem to believe that perhaps a large stock of processed and manufactured cloth has piled up between the mill and the ultimate consumer. However, it is expected that that stock has been considerably depleted by the January white sales held in retail establishments all over the country.

The Stamp Plan for Cotton Goods

Another item which is encouraging in face of reports of large stocks of cloth is the stamp plan being proposed by Secretary Wallace. The program would mean the distribution of cotton goods to relief families through the normal channels of trade, and will be put into operation before April 1. A series of meetings was held recently at which farm leaders and trade groups interested in the surplus cotton problem endorsed the plan. Stimulation of cotton goods consumption will run into the millions, it is expected.

The cotton stamp program will follow the same plan as the food stamp program and cities in which the food stamp plan is operating will be chosen for the inauguration of the cotton stamp plan. The cotton purchase plan will operate through the same agencies and with the same organization established for food stamp distribution, the only difference being that for each dollar's worth of cotton goods stamps purchased by needy folks a dollar's worth of stamps will be given free of charge to the purchaser. Thereby, we see that cotton stamps are on a dollar-to-dollar basis where food stamps were on a 50 cents-to-a-dollar basis. It is understood that the Surplus Commodity Corporation has ample funds with which to finance the program through the fiscal year, since Congress last year voted $113,000,000 for surplus removal, and

out of that fund $14,000,000 was allotted for the removal of domestic surplus cotton out of which only $2,000,000 has been spent.

Therefore, we see that if the needy are to get the benefit of $12,000,000 worth of cotton stamps they have to spend $12,000,000 of their own which will make a total expenditure for cotton $24,000,000. This sounds like juggling to this writer, and we may be of a horse-and-buggy regime, but we still hold that if the needy have $12,000,000 to spend for anything, they aren't needy!

Actual mechanics of the plan are this: Purchases of cotton goods with stamps will be through the regular merchants, who will accept the stamps in payment. The stamps will be in denominations of 25 cents. Merchants will not be permitted to give cash to purchasers in exchange for stamps when the purchase is less than 25 cents or a multiple of 25 cents. Purchasers will be required to pay the difference in cash for which the merchant will be permitted to give a credit slip for future stamp purchases.

Stamps will be sold on a three-month basis. A one and two-person family may purchase a minimum of $2.00 and a maximum of $3.00; a three and four-person family may purchase a book of $3.00 or $5.00, and a family of five or more persons may purchase a $4.00 or $6.00 book. For each purchase of stamps an equal number of stamps of the same value will be given the purchaser, thus enabling the family to double the amount of the purchase. Stamps will be good only when not detached from the stamp book and are exclusively for the benefit of those designated to use them.

The department defines "cotton goods" as "any commodity which is new, which is sold in retail dry goods stores for human or household use, and which is made entirely from cotton manufactured in this country."

The Export Subsidy

It is recalled that $14,000,000 was set aside last Congress toward export of cotton under the plan of the export subsidy which went into effect August 1. On January 30 the Department of Agriculture scraped the bottom of the barrel and announced that the rate of payment under the cotton export program had been reduced to zero on cotton, card strips, and comber waste, leaving in operation the rates effective at that time on other cotton products Suspension of operations under the cotton export program with the exception of the latter items was simply because the money had given out. Whether or not the export subsidy had anything to do with the export totals we will not discuss, but in January of this year 1,026,628 bales were exported compared to 806,720 bales during December and 289,514 bales during December a year ago. Total exports for the year will probably go to 6,500,000 bales with 5,000,000 already exported out of the '39-'40 crop.

Next year farm aid will probably be considerably reduced, for the House Appropriations Committee has approved an unprecedented reduction in farm aid funds, cutting $641,841,059 out of the proposed measure for the coming fiscal year. The Agriculture Bill contained no funds for farm parity payments, made no provision for financing the Certificate Plan, and carried no funds for the disposal of surplus commodities. The Committee's elimination of the funds for surplus commodities' disposal which included both the food stamp plan and the export subsidy program depends upon the 30 per cent of customs revenue which is automatically ear-marked for that purpose, but Mr. Wallace is pretty upset because he does not feel he can get along with that little amount of only $100,000,000.

The Raw Cotton Picture

The raw cotton situation may be summed up about like this: An estimated consumption in the country of at least 9,000,000 bales; a possibility of 6,500,000 bales exported; and an actual crop of 11,500,000 bales. It is reasonably certain that the Government loan will be to provide between 2,000,000 and 3,000,000 bales of cotton for export and domestic spinning. And so it seems to those of us, who belong to the good old days before New Dealism, that the surplus commodities are going to be taken care of by the old law of supply and demand.

One thing that may help would be the promotion by the railroads to wrap piece goods shipments with cotton cloth instead of burlap. According to Carl Cunningham, manager of the traffic department of the Cotton Manufacturers Associations of North Carolina and South Carolina:

"The tariffs now permit the shipment of finished cotton piece goods when covered with cotton cloth regardless of thread count or weight of the covering, but there is a limitation requiring cotton cloth used as covering for unfinished goods to weigh at least 8 ounces per square yard.

"We have just recently handled with the railroads in an effort to remove that restriction. The subject was docketed under SRA Submittal 21150. We appeared at public hearing in support of the proposal. The proposal has been approved by the Southern Freight Association Lines and submitted to the other associations for their concurrence.

"We are now in receipt of copy of letter from the New England Freight Association agreeing to eliminate the weight restrictions with respect to the cloth used for covering unfinished goods and yarn in order that these commodities may be i nthe same status as finished goods, but the New England Freight Association did not concur in eliminating restrictions against the weight of covering used on the few miscellaneous commodities in the finished cotton goods list, such as filter press cloths or mats, machinery wiping cloths, mop heads, laundry padding, backband webbing, etc.

"No reason was given for failure of the New England Lines to concur in complete elimination of Note 1 now providing for weight restriction as to cotton cloth used in covering these commodities. However, the effect of eliminating the restriction on cotton piece goods and yarn should be of greatest importance and it is possible that further handling may be given to the elimination of the weight restriction on the other miscellaneous commodities referred to above."

This would certainly be a fine new use and we commend Mr. Cunningham on his efforts along this line.

Textile interests as a whole are watching the development in Congress on a renewal of the Reciprocal Trade Treaties next June 12. It is understood that the majority of the Democratic members of the House Ways and Means Committee reported that the treaties should be renewed or extended for three years. Textile interests have been opposed to the Reciprocal Trade Agreements, particularly in the fine goods section. They hold that the depreciated British currency, plus lower labor costs, plus the lowering of tariffs on fine goods is such a substantiated advantage to the British manufacturer that fine goods mills of this country cannot compete with British producing goods of their manufactured quality. They feel that with the severe inroads made by rayon in the fine cotton goods section that this item should be protected from further competition from foreign made goods. On the other hand, the National Cotton Council supported the Reciprocal Trade Agreements program and asserted that its continuance would solve cotton's foreign trade problems.

Amending the Wagner Act

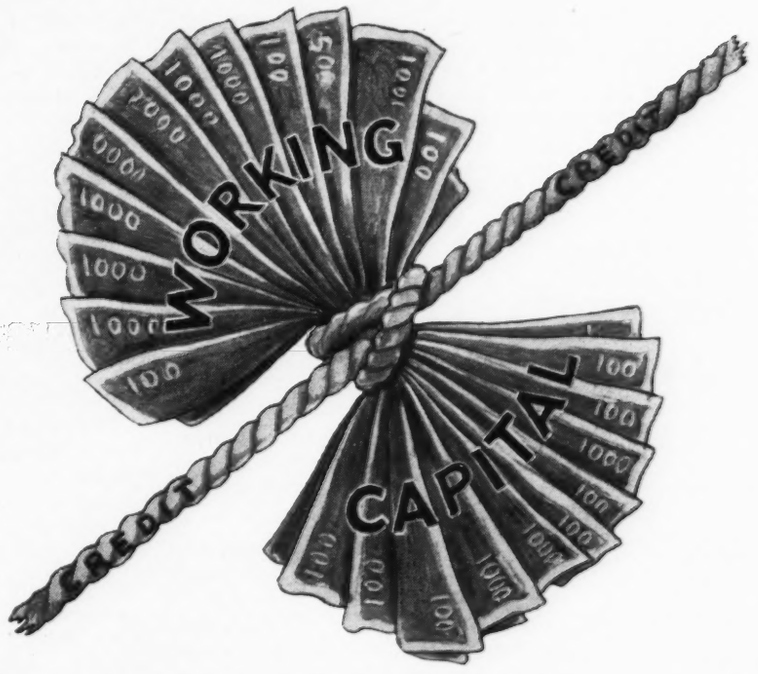
Another legislative discussion of interest to the textile business is that conflict over amending the Wagner Act. Details of discussion included the following points:

1—Should the present board, consisting of J. Warren Madden, Edwin S. Smith, and William Leiserson, be abolished and replaced by a new one? The American Federation of Labor, which has accused the board in the past of bias in favor of the C.I.O. has advocated creation of a new five-man board. John L. Lewis has opposed any change in the Wagner act on the ground that it might be weakened.

2—Should the act's general provision, empowering the board to take such affirmative action as will effectuate the law's policies, be repealed? This question has arisen partly as the result of testimony that the board "invented" remedies for alleged violations of the act when one of the remedies provided by Congress applied.

3—Should an effort be made to take the board out of organized labor's civil strife by forbidding it to determine the proper units for collective bargaining in cases involving A.F.L.-C.I.O. rivalry? An amendment along this line has been suggested by Dean Lloyd K. Garrison of the Wisconsin university law school, former chairman of the board.

4—Should the board be made to abide



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by the rules of evidence which prevails in trials by jury? Madden has expressed the opinion that labor would have a "real grievance" against Congress if the legislators wiped out the board's exemption from these rules without taking away a similar exemption enjoyed by other Federal administrative agencies.

And so we close this resume urging every textile manufacturer to wake up to what's happening on this Wagner Bill and if you expect or hope for better business in your industry get your Congressman to see that that bill is amended, giving the employer the same rights as the employee. Particularly should we insist that the National Labor Relations Board be made to abide by ethics established in trial by jury, as outlined under Question 4.

What the Southern Mills Are Doing

When the assets of the Fisk Rubber Corporation were acquired by the United States Rubber Company in January, the large Fisk tire cord mill at New Bedford, Mass., containing 60,000 spindles, was added to the three tire cord mills in the South making up the Tire Cord Division of the U. S. Rubber Company. Headquarters of the Tire Cord Division will remain in Hogansville, Ga., according to statement by H. Gordon Smith, general manager. The mills in this division now include the Winnsboro Mills, Winnsboro, S. C., the Stark Mills, Hogansville, Ga., the Shelbyville Mills, Shelbyville, Tenn., and the Fisk Cord Mills, New Bedford. The four mills have over 175,000 spindles and employ between 4,500 and 5,000 people. The production and marketing of Fisk tires and tubes will be continued by the United States Rubber Company, and a separate sales division of the U. S. Tire Dealers Corp. has been established for the marketing of Fisk products. The tire cord mills at New Bedford will supply cord as in the past for Fisk tires and will also produce cord for United States tires. (For personnel changes involved in the acquisition of the New Bedford plant, see page 80 of this issue.)

J. E. Sirrine & Company, Greenville, S. C., consulting and designing engineers, have let three special contracts for the new 480-loom rayon weaving plant of the Carter Fabrics Corporation, South Boston, Va.; one to Adams Electric Company, Reidsville, N. C., for the installation of the lighting and power wiring; one to Grinnell Company for outside fire protection and sprinkler equipment; and the other to C. M. Guest & Sons, Anderson, S. C., for the steam piping contract. In addition, the engineers have placed orders for two boilers for the new plant from the Kewanee Boiler Company, and stokers from the Detroit Stoker Company, Monroe, Mich.

Industrial Rayon Corporation will increase the present capacity of its Painesville, Ohio, plant by more than 50 per cent, adding in excess of six million pounds to its total annual output of yarn for the weaving industry. Cost of the extension is estimated at four million dollars.

Erwin Manufacturing Company, Huntsville, Ala., which has been closed for the past year, has been sold to Charles A. Peollnitz, Jr., Florence, Ala., attorney, acting in behalf of other interests, for $25,000. No plans have been announced for the re-opening of the plant.

Standard Ribbon Corp., Stroudsburg, Pa., will open a weaving plant at Brewton, Ala., with operations being carried out in the building formerly owned by the Brewton Silk Mills Corporation. It is estimated that the annual payroll will be about $50,000.

It is reported that the newly organized West Texas Woolen Mills will build a large woolen mill at Eldorado, Tex., which is in the heart of the wool and mohair growing section of Texas. J. M. Christian is to be the manager of the new industry.

Brenham (Tex.) Cotton Mills, Inc., have been acquired by the same group that owns the Bonham (Tex.) Cotton Mills. Herbert A. Burow will manage both plants and George Hugeley, formerly connected with the Scottdale (Ga.) Mills, will be superintendent.

Hudson Narrow Fabrics Mills, Easley, S. C., a newly organized concern, will operate seven looms upon tapes, webbing and narrow fabrics. Edgar C. Martin, Greenville, S. C., is president and treasurer.

Hartsville (S.C.) Cotton Mills, after test installations, are changing all of the spinning to that using paper tubes. Spindles are supplied by Saco-Lowell Shops and are equipped with SKF antifriction bearings.

Pacific Mills, according to reports, is planning to consolidate the merchandising and selling of its entire production of finished rayon fabrics into one division under the management of J. E. Bradley.

Mary Louise Mill, Mayo, S. C. (near Spartanburg), which has been closed for several years, has recently been purchased by the Neisler interests of Kings Mountain, N. C., and has been re-opened.

Mills Mill No. 2, Woodruff, S. C., has installed approximately $20,000 worth of machinery, most of which are looms. A warehouse also has been completed at a cost of approximately $5,000.

Cowpens (S.C.) Mills have been sold for $47,500 to a group of creditors represented by George Norwood, Greenville, S. C., banker. It is understood that the mill will not be re-opened.

Lanett (Ala.) Bleachery & Dye Works has placed in operation the new $25,000 filter plant, and machinery installation is well under way in the new $75,000 addition to the plant.

The West Point (Ga.) Manufacturing Company has let a contract for the erection of a theater building at Riverview, Ala., the site of one of its manufacturing plants.

The Gastonia (N. C.) Combed Yarn Corporation has added 22 spinning frames, which increases the total number to 39,420.

Clearbrook Woolen Company, Inc., Winchester, Va., a new concern, is operating 16 looms in the manufacture of women's sportwear.

Wampum Mills, Lincolnton, N. C., are being re-equipped with machinery purchased from the Wiscassett Mills, Albemarle, N. C.

Gem Yarn Mills, Cornelius, N. C., have replaced old spinning with new, and made some additions, bringing the present spindleage to 11,384.

Hannah Pickett Mills, Rockingham, N. C., will change 144 warp frames to long draft spinning, using the Saco-Lowell system.

Mandeville Mills, Carrollton, Ga., are installing a humidifying system, supplied by the American Moistening Company.

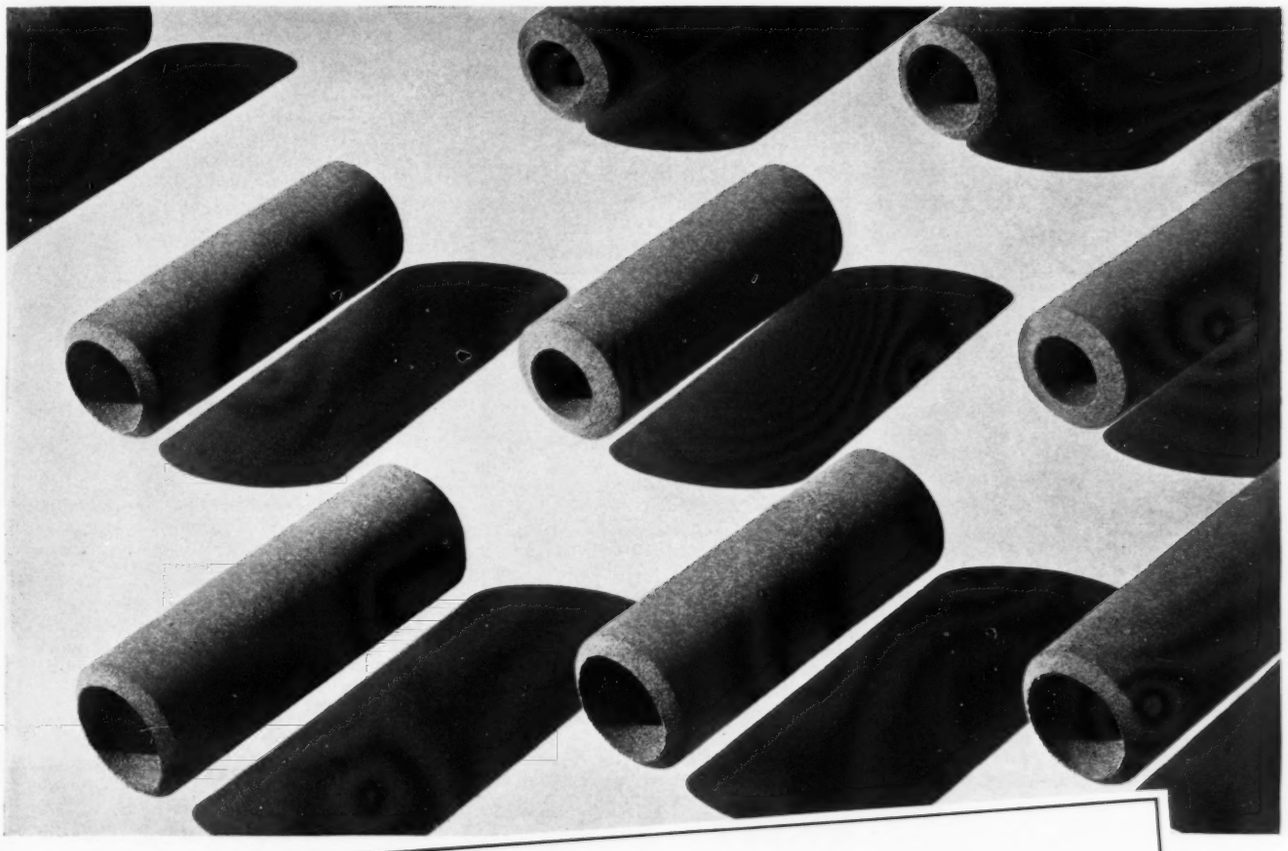
Spartan Mills, No. 1 Plant, Spartanburg, S. C., are re-flooring a major portion of the building. This is one in a series of modernization projects.

Aponaug Cotton Mills, Winona, Miss., was destroyed by fire about the middle of January. Loss is estimated at $200,000.

It is understood that the old Monarch Mill, Dallas, N. C., will be put into operation soon.

Louisville (Ky.) Textiles, Inc., has completed a new modern office building.

Gregg Dyeing Company, Aiken, S. C., has completed a three-story addition to its plant.



1,500,000 MORE SPINDLES
TO RUN ON ARMSTRONG'S CORK COTS

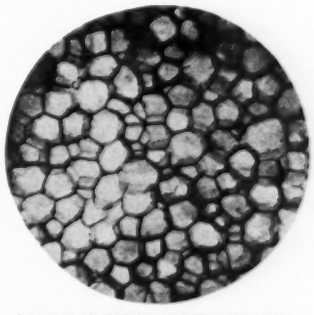
DURING 1939, mills representing a total spindlage of 1,500,000 made the decision to equip with Armstrong's Seamless Cork Cots. This will bring the total to more than 8,500,000 active spindles running on Armstrong's Cork Cots.

Economy is one of the chief reasons why so many mills are switching to cork. The initial cost of Armstrong's Cork Cots is no higher than that of other types of roll coverings. Your savings start with quicker, cheaper assembly. And your savings continue, for cork gives longer wear because it's tougher. Furthermore, you can rebuff these cots—make them like new—*three or four times*. Each rebuffing costs about *half a cent a roll!*

In addition, you can produce *better yarn* with Armstrong's Cork Cots. The higher coefficient of friction of these roll coverings assures a stronger, more uniform product. Running of the work, also, is improved with cork. You get less eyebrowing and end breakage. Less clearer waste, fewer top roll laps, and less trouble with hard ends. From *every* standpoint, cork gives better service!

Mills throughout the industry have reported savings of 50%—and more—on roll covering costs after changing over to cork. Let an Armstrong representative show you how *your* mill can reduce production costs and boost quality by switching to Armstrong's Cork Cots. He will be glad to show you actual production figures of mills spinning your range of numbers on cork.

Write Armstrong Cork Company, Industrial Division, Textile Products Section, 923 Arch St., Lancaster, Pa.



WHY CORK COTS HAVE LONGER LIFE

As this photomicrograph shows, cork consists of millions of tiny cells of entrapped still air. The cell walls are exceedingly thin—yet amazingly strong. This remarkable formation endows cork with many valuable properties; one of these is extraordinary durability.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

COMMENT on the COTTON MARKET

New Orleans, February 21, 1940

FOLLOWING a period of dullness and easiness, the cotton market assumed a more active attitude as result of steadier foreign markets where liquidation seemed to have run its course. It was rumored that the India bank had been buying silver in the bazaars, and it was thought that the weight of the crop movement in that country had been about discounted, at least for the present.

Apparently the market had declined recently to a point that invited some buying for future requirements, especially for domestic mill account, and as "free" cotton was scarce and offerings light, buyers were compelled to bid for loan cotton. The demand for export, however, had fallen off owing to foreign cotton prices having declined abroad to a point that brought them to a level more attractive in competition with American. The absence of the subsidy and the movement to market of Indian and Brazilian growths was a hindering factor in the less urgent demand for the American product. Nevertheless, American values more than held their own because of the domestic demand. Again, however, the market has become dull.

Aside from the spot situation, the market was helped by a firmer stock market and there seemed to be a more potent demand for grain and provisions from abroad in a more general way. In some quarters this was called war buying, and it is thought that the belligerents now are better prepared to enter the world markets for necessities which, it is thought, they must have ere long.

Volkart Brothers report their estimate of the India crop at 5,960,000 bales, including domestic use. This compares with the December estimate of 6,069,000 bales and with a crop of 6,477,000 bales last season.

Recently Washington stated that probably Japan will not be able to fill her needs for staple in the Far East and may have to buy more American cotton than she anticipated. Exports from the United States to Japan to February 16, were 650,000 bales versus 584,000 to the corresponding date last season, and to China 313,000 bales against 49,000.

Advices from Houston state that the export demand is relatively small. It is argued that another advance in raw prices will be necessary to bring out any quantity of loan cotton. Some eastern spot centers say that demand and offerings both are light.

Worth Street continues to be a drag on the market as volume remains light and prices are said to be unsatisfactory to mills. There is still talk of the considerable volume of inquiry in the market, but the expected revival in goods distribution has not shown up. There is some talk of probable curtailment in a small way, but such a step, if taken, may spread for want of a better demand.

Tending to sustain the domestic demand for the actual, at a time when the export inquiry is light, is the large domestic consumption of the lint, which for January was of record-breaking proportions—730,000 bales versus 598,000 for the corresponding month of last season, making a total for six months of 4,042,000 bales against 3,397,000 last year.

As to exports, however, shipments to February 16 are nearly double of what they were to same date last season—4,700,000 bales versus 2,532,000, and indications are they will likely continue free for some time to come. The large movement of American cotton abroad represents mostly old business, induced largely by the recent subsidy, funds for which, so far as this season is concerned, are said to be exhausted, except perhaps for cotton goods. Therefore, any European export demand of consequence in the near future can hardly be expected unless it comes from sheer necessity. It is probable though that there may be a good demand from the Orient and naturally from American mills, which possibly might become active at times.

European war news and failure of the stock or goods markets to revive keeps the market dull, although moderate hedge sales are absorbed easily.

Private advices from the interior are to the effect that preparations for the next American cotton crop are about a month backward, except perhaps in the Rio Grande section of Southwest Texas, due to the severe weather during January and February, but the benefits to the soil from the extreme low temperatures and the destruction of insect life are stressed. Except in the extreme west and the Rio Grande district, there is said to be a good season in the ground as result of the winter rains. But almost everywhere in the cotton region, farm work is said to be very backward. With a period of good weather in the near future there probably is time to catch up with field work and have the sod ready for seeding when planting time arrives.

CENSUS REPORT

United States— Bales—	This Season	Last Season
Consumption of lint in Cotton Growing States, January	619,000	509,000
Consumption of lint in New England States, January	91,000	74,000
Consumption of lint in All Other States, January	20,000	15,000
Consumption of lint in United States, January	730,000	598,000
Consumption of lint in Cotton Growing States, 6 months	3,431,000	2,879,000
Consumption of lint in New England States, 6 months	495,000	426,000
Consumption of lint in All Other States, 6 months	116,000	92,000
Consumption of lint in United States, 6 months	4,042,000	3,397,000
Mill stocks, January 31	1,777,000	1,630,000
Stocks in public storage and at compresses January 31	13,207,000	14,758,000
Stocks in mills, public storage and at compresses Jan. 31	14,984,000	16,388,000
Stocks in mills, public storage and at compresses Dec. 31	16,442,000	17,041,000
Active spindles in Cotton Growing States January	17,186,000	17,108,000
Active spindles in New England States January	5,067,000	4,768,000
Active spindles in All Other States January	619,000	620,000
Active spindles in United States January	22,872,000	22,496,000
Active spindles in United States December	22,777,000	22,433,000

AMERICAN COTTON

August 1 to February 16 Bales—	This Season	Last Season
Brought into sight (marketed)	12,172,000	9,620,000
Exports from the United States, incld. Canada	4,700,000	2,532,000
Spinners takings (world)	(*)	7,617,000

WORLD'S VISIBLE SUPPLY OF COTTON

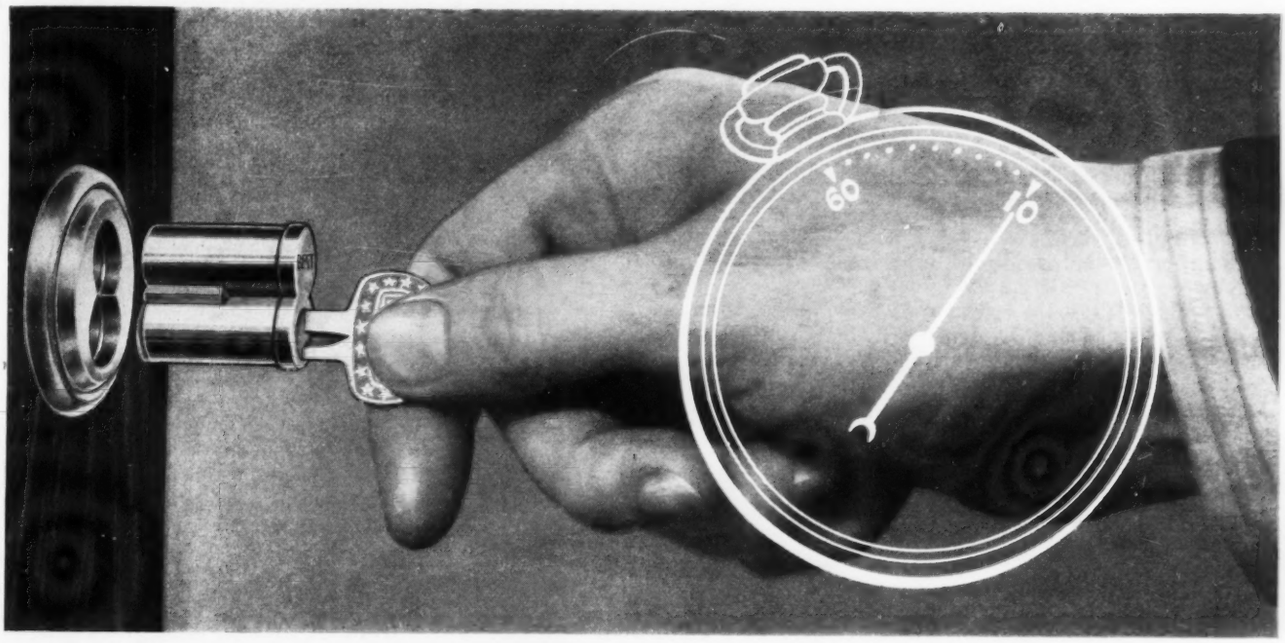
February 16— Bales—	This Year	Last Year
Stocks at U. S. ports	2,992,000	2,673,000
Stock at 102 interior towns	4,035,000	4,446,000
Afloat to and at ports of Europe	(*)	1,055,000
Afloat to and at ports of Orient	464,000	174,000
Totals of American	(*)	8,348,000
Total of other kinds	(*)	2,345,000
Total of all kinds	(*)	10,693,000

(*) Not available account of war conditions.

Rankin Joins Carter Interests

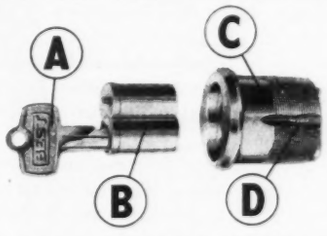
Lamar Rankin, Gastonia, N. C., for 15 years connected with the Hanover Mills, has become associated with A. B. Carter, Inc., Gastonia, as sales representative in part of North Carolina.

The picture above is of the basketball trophy donated by the Corn Products Refining Company to the Southern Textile Athletic Association. The tournament was held at Greenville, S. C., March 6-9. This trophy must be won three times by one team to obtain permanent possession. Corn Products offered the trophy once before on the same conditions and the team from Southern Bleachery, Taylors, S. C., won it for keeps by taking the pennant three times in succession.



Picture of a mill officer changing a lock

in ten seconds



Every BEST LOCK is equipped with the exclusive BEST INTERCHANGEABLE CORE

There is a size or type of BEST LOCK or LATCH for every use . . . on mill gates, supply rooms, shipping rooms, tool houses, oil houses, offices, desks, drawers and cabinets. And every one has the BEST Interchangeable Core which is instantly interchangeable with any other BEST lock core on your property.

Your private control key (A) removes the Core (B) from its housing (C) and replaces it with another. A slight turn of the key and the core slips out but it is impossible to remove it in any other way. The safety set screw (D) which holds lock in place is deep inside the lock housing and cannot be tampered with.

FITS PADLOCKS, TOO

BEST Interchangeable Cores not only fit locks in fixed housings but can be inserted in BEST padlocks, too. This increases the flexibility of your locking system. Many cotton mills and other industrial plants enjoy the positive protection, certain security and flexibility that only BEST Locking Systems afford.

How to cut costs of lock servicing and replacement . . . and keep constant control of all mill property

Danger threatens! It may be caused by one lost or stolen key . . . or by problems that threaten your entire property. To quickly bar unauthorized intruders by changing *old-fashioned* locks is practically impossible.

BUT . . . if your plant is equipped with BEST UNIVERSAL LOCKS . . . the only locks with the exclusive, patented BEST *Interchangeable Core* . . . security is certain! Changing a lock is the work of an instant.

The above picture illustrates how. Your control key instantly removes the core (which contains the locking mechanism) from the lock, replaces it with another core of different combination. All keys under suspicion are useless at once. In ten seconds . . . you have a *new lock's security without a new lock's expense!* And authority is kept *right where you want it!*

The average mill spends plenty on lock upkeep and replacement, but with BEST LOCKS you cut these costs because you don't buy new locks or waste time on the old ones. Simply replace one lock core with another Then the removed core is recombinated for use elsewhere.

Your mill can be BEST-equipped without changing present lock hardware. You can start in a small way, with a few locks, and gradually build up a complete, flexible BEST master-keying system to protect your entire properties. A trained BEST LOCK engineer is near to advise and help you.

☆ ***Write direct to us for the complete BEST story and our illustrated Preview Catalog***

BEST UNIVERSAL LOCK COMPANY, INC.
730 EAST WASHINGTON STREET, INDIANAPOLIS, INDIANA
REPRESENTATIVES IN ALL LEADING CITIES

NEW EQUIPMENT and MATERIALS

Literature on H & B Rubber Covering Machine

The H & B American Machine Company, Pawtucket, R. I., has made available literature, photographs, and schematic drawings, descriptive of and showing how the company's rubber covering machine operates. The machine, which is single sided with 40 deliveries, will cover light and heavy rubber. It is the result of several years of development and improvement by the company's research organization.

◆

Pontachrome Orange RL

E. I. DU Pont DE Nemours & Company, Inc., Dyestuffs Division, Wilmington, Del., has announced a new chrome color, Pontachrome Orange RL, which is said to possess very good fastness to light. It is also fast to carbonizing; steaming, perspiration, washing and fulling have very little, if any, effect upon the shade, according to the company.

◆

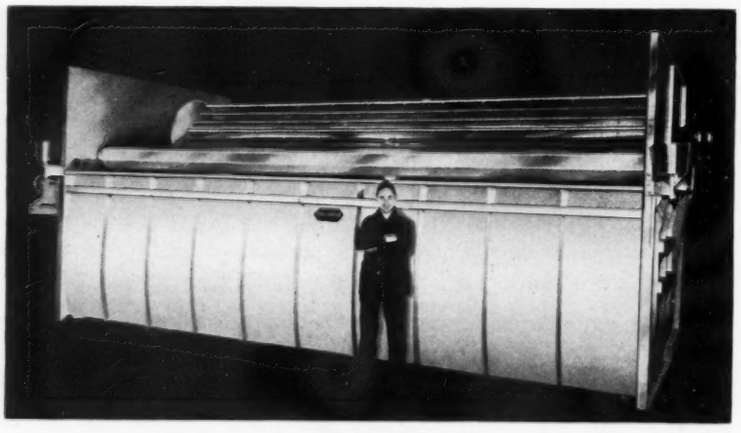
Portable Device Removes Odors in Air

The Dorex Division of the W. B. Connor Engineering Corporation, 114 East 32nd St., New York City, has made available a newly invented portable odor absorber, employing the principle of the ordinary gas mask. It is used for removing unpleasant odors, gases, smoke, etc., from the air in offices and factories. Known as the squirrel cage odor absorber, it is simple and compact—having but one moving part, the electric motor which draws the foul air in and delivers purified air back into the room after the odorous and gaseous impurities have been removed. Two types are available, one for installation on the wall or ceiling, where it occupies little more area than an ordinary fan, and the other to be applied to any existing ventilating or air conditioning system.

◆

New 4-Roll Stainless Fulling Mill

Riggs and Lombard, Inc., Lowell, Mass., have made installations of the company's new 4-roll stainless fulling mill and reports indicate that this machine has proved successful. It is really four fulling mills in one, since it can handle four different fabrics with different fulling requirements at the same time, being suitable for such fabrics as worsteds, where reduction in loading time is important. The four separate bottom rolls are on one continuous shaft, while each top roll has a separate pneumatic pressure device. Separate guides are provided for each fabric and pressure in each packing box is independently adjustable. All parts contacting the cloth are stainless metal.



This dyeing machine is said to be the largest of stainless steel ever built. It is 20 feet long and of 6,000-gallon capacity. A machine of this size, according to Rodney Hunt Machine Company, Orange, Mass., the manufacturer, is made possible by a unique method of construction, called the "curve-of-strength" construction. By this method, the sides of a tub have a natural bulge instead of the conventional square construction. It is claimed that the sides of such machines will not buckle or flex under the tremendous pressure created by the dye liquor. This machine is used by the Botany Worsted Mills and it will dye from 30 to 50 pieces at one time. The reels on this machine are 20 feet long and entirely unsupported by any middle bearing.

Permanent Mildew-Proofing

Western Reserve Chemical Company, 1740 E. 12th Street, Cleveland, Ohio, announces that the completion of research since 1934 has led to the development of a chemical called Steriltex which is guaranteed to make all fabrics and fibers permanently mildew proof and actively antiseptic. Steriltex has been made possible by the fact that a rare and formerly expensive chemical is now being produced inexpensively in commercial quantities. Treatment is very simple and inexpensive. Steriltex is applied by immersion and drying, and can be mixed in any finishing bath without changing the finishing compound. It is odorless, colorless, non-combustible, completely harmless except to bacteria and fungus, and does not affect dyes or textiles in any manner.

◆

Avitex L and Duponol G

Dyestuffs Division of E. I. DU Pont DE Nemours & Company, Inc., Wilmington, Del., has announced a new textile softener, Avitex L, said to have high lubricating properties and essentially complete rinsability from textile fibers. It forms clear type emulsions in water, is soluble in presence of high concentrations of many salts and is resistant to high degrees of hardness in water. It is highly stable in solution on prolonged boiling.

Duponol G is a new alcohol sulfate emulsifying agent derived from lauryl alcohol. It is a translucent amber colored paste to be added to the oil phase for preparation of emulsions. It forms limpid solutions with mineral and vegetable oils in the presence of soluble oils, according to the company.

◆

New Line of Large Size Welded Fittings

The American Brass Company, 25 Broadway, New York City, has introduced a line of large size fabricated-and-welded fittings, available either in copper or Everdur copper-silicon alloy. This is a supplement to the already existing line of Anaconda brass and copper pipe, copper tubes, and solder fittings. Fittings in the new line range in size from 8 to 24 inches and are available in the form of 45 and 90 degree elbows, reducers, straight tees, etc. They are readily adaptable to large diameter, seamless cold drawn, welded, or riveted and brazed carrying lines, such as are used in textile mills, chemical plants, etc.

◆

Remote Control for Varidrive Motors

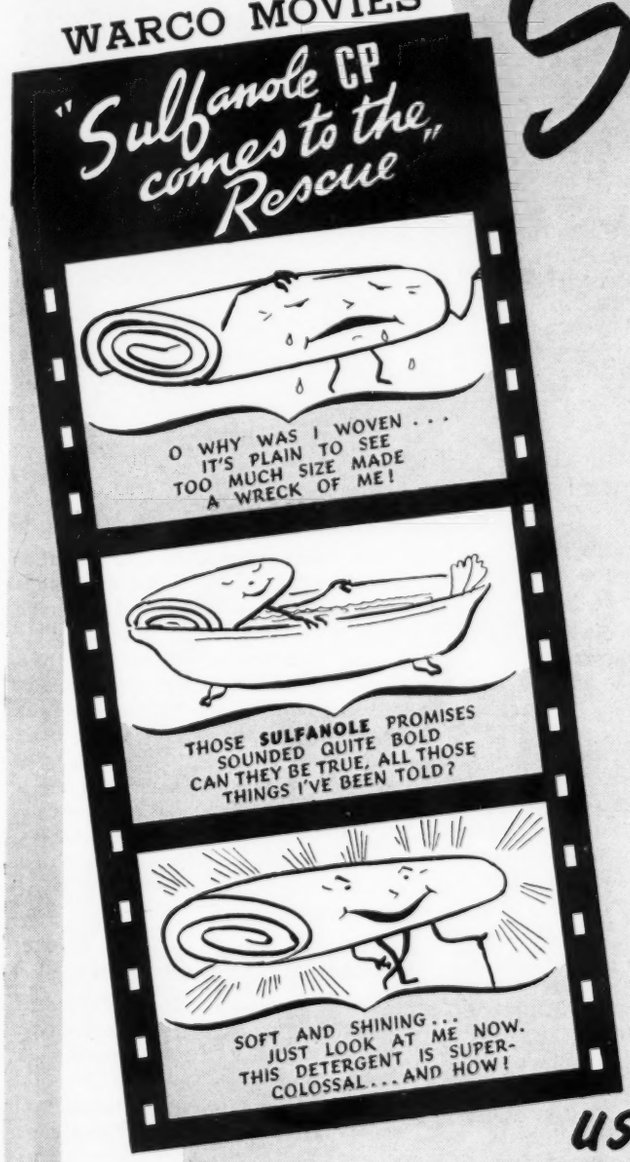
U. S. Electrical Motors, Inc., Los Angeles, Cal., has announced a new single, right angle, mechanical remote control for varidrive motors, which is said to provide an accurate, simple

CLICKED!

Sulfanole CP

A WARCO DETERGENT TRIUMPH that is YEARS AHEAD in EFFICIENCY and SAVINGS!

WARCO MOVIES


"Sulfanole CP comes to the Rescue"
O WHY WAS I WOVEN . . .
IT'S PLAIN TO SEE
TOO MUCH SIZE MADE
A WRECK OF ME!
THOSE SULFANOLE PROMISES
SOUNDED QUITE BOLD
CAN THEY BE TRUE, ALL THOSE
THINGS I'VE BEEN TOLD?
SOFT AND SHINING . . .
JUST LOOK AT ME NOW.
THIS DETERGENT IS SUPER-
COLOSSAL . . . AND HOW!

SULFANOLE CP, SULFANOLE PB's *NEW TWIN*, HAS ACHIEVED INSTANT RECOGNITION AS THE MOST EFFICIENT AND ECONOMICAL DETERGENT FOR RAYON BOILOFF!

EFFICIENT because of its superior emulsifying power . . . . its suitability as a complete soap substitute for scouring, boil-off, and for dyeing of all types of fabrics . . . its effective wetting and penetrating properties at any normal processing temperatures and in water of any degree of hardness...and finally because it will not deposit the injurious residues usually encountered when using soaps.

Economical because you use less than one-half the amount required for soap solutions and because it removes quickly and completely in the rinse.

A Warwick technical adviser will gladly collaborate with you on a formula for your INDIVIDUAL needs.

use SULFANOLE CP for Rayon Boil-off..and Save!

WARWICK
CHEMICAL COMPANY
WEST WARWICK, R. I.

FACTORIES IN:
WEST WARWICK, R. I. ROCK HILL, S. C.
BRANCH OFFICES AT:
BETHLEHEM, PA. PHILADELPHIA, PA.
PATTERSON, N. J. BURLINGTON, N. C.
GRIFFIN, GA. 580 FIFTH AVENUE, N. Y.
IMPREGNOLE SALES AGENTS:
IMPREGNOLE CORP., 580 FIFTH AVENUE, N. Y.

means of selecting the desired operating speed of the varidrive motor when the varidrive is mounted beneath or above the driven machine or is otherwise inaccessible. The control shaft may be extended at a 90 degree angle in any one of eight different directions. An enclosed set of helical right angle gears makes this possible. This right angle remote control permits the handwheel to be placed within easy reach of the operator so that the exact desired speed can be maintained without difficulty at all times.

◆

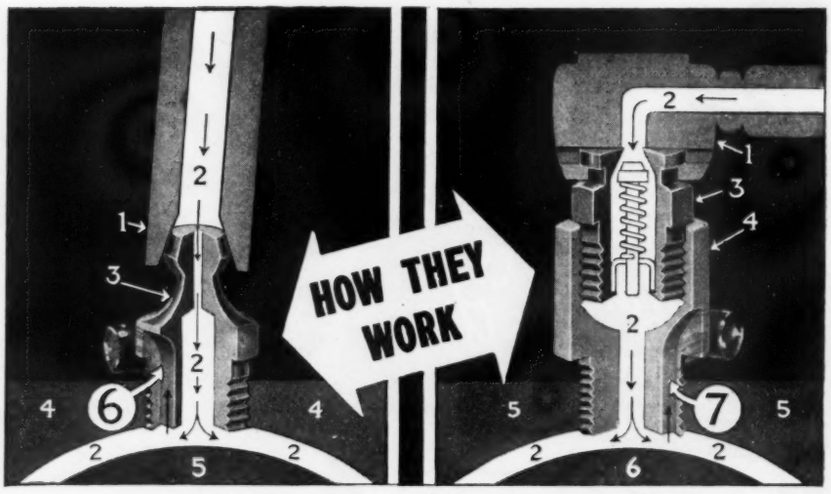
Stop Signal for Anti-Friction Bearing Lubrication

The Alemite Division of Stewart-Warner Corporation, Chicago, Ill., has recently perfected a stop signal to be used with the lubrication of ball and roller bearings. Lubriguards, a new line of fittings and bushings for industrial machinery, are so constructed that they signal the operator when a bearing is sufficiently lubricated. When the hydraulic-type pressure gun is applied to the Lubriguard fitting, the lubricant is forced through an inlet of the fitting, and thence into the anti-friction bearing. When a predetermined amount of back pressure is developed in the bearing, excess lubricant appears at the vent, a signal to the operator that further lubrication is inadvisable. In making it impossible to cram anti-friction bearings with grease, the new devices save power loss, accelerated wear, repairs, and lubricant wastage that are direct consequences of overlubrication, it is said.

◆

Turbine Mechanical Electrical Range Drive

General Electric Company, Schenectady, N. Y., has made available a turbine for printing and soaper range drives, which utilizes the principle of using turbines for mechanical drives and to drive electric generators. The turbine is coupled to the pace-making unit of the range and to an ac. generator. All the other units are motor driven in practical synchronism with the lead because the ac. frequency varies directly with the turbine speed. In one application there are eight units in a soaper range; the dry cans are turbine driven and the other seven units are induction motor driven on three floors quite inaccessible for mechanical drive. With the turbine exhaust system heating the dryers, the speed is adjusted to the drying characteristics of the goods in process.



Lubriguard fitting

Lubriguard bushing

Review of Books of Textile Interest

"Shop Safety Illustrated"

National Safety Council, 20 N. Wacker Drive, Chicago, Ill., has published a 40-page book entitled "Shop Safety Illustrated", which contains numerous pictures emphasizing the safe method of performing tasks, and general safety methods in industrial plants. It is an excellent treatise on the subject of accident prevention.

◆

"Comparative Textile Chart"

Scheuer & Company, 72 Leonard St., New York City, textile brokers and consultants, are distributing the 1939 edition of their "Comparative Textile Chart", which among other items, includes a price history of 64x60 38½-inch 5.35 print cloth. Another feature is the section which shows the total annual production and consumption for the country of cotton cloth, rayon yarn, and rayon staple fiber.

◆

"1939 Book of A.S.T.M. Standards"

The American Society for Testing Materials, 260 South Broad St., Philadelphia, Pa., has announced that the "1939 Book of A.S.T.M. Standards" is nearing completion. Parts Two and Three are already printed and Part One will be available in the very near future. Part One covers metals, Part Two non metallic materials, such as concrete, masonry, etc., and Part Three non metallic materials of a general nature, such as fuels, petroleum products, etc. List prices for any one part $8.00, and two parts $15.00, and all three parts $22.00.

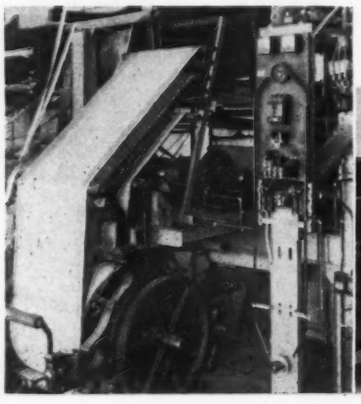
◆

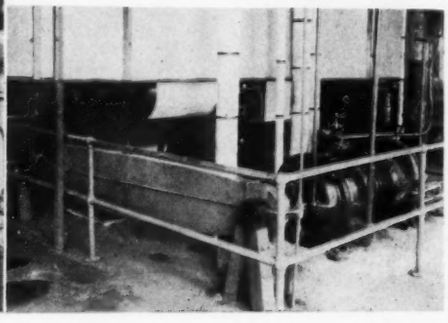
"Cotton Opening and Picking"

Gilbert R. Merrill, Lowell Textile Institute, Lowell, Mass., has published a revised edition of "Cotton Opening and Picking", an excellent book for both the student and the experienced mill man. The new edition includes about 50 per cent more material than the first edition, plus a table of contents and a list of illustrations. The price remains the same, $1.75 postpaid in the U. S., on receipt of funds.

Hood Assistant to Harris

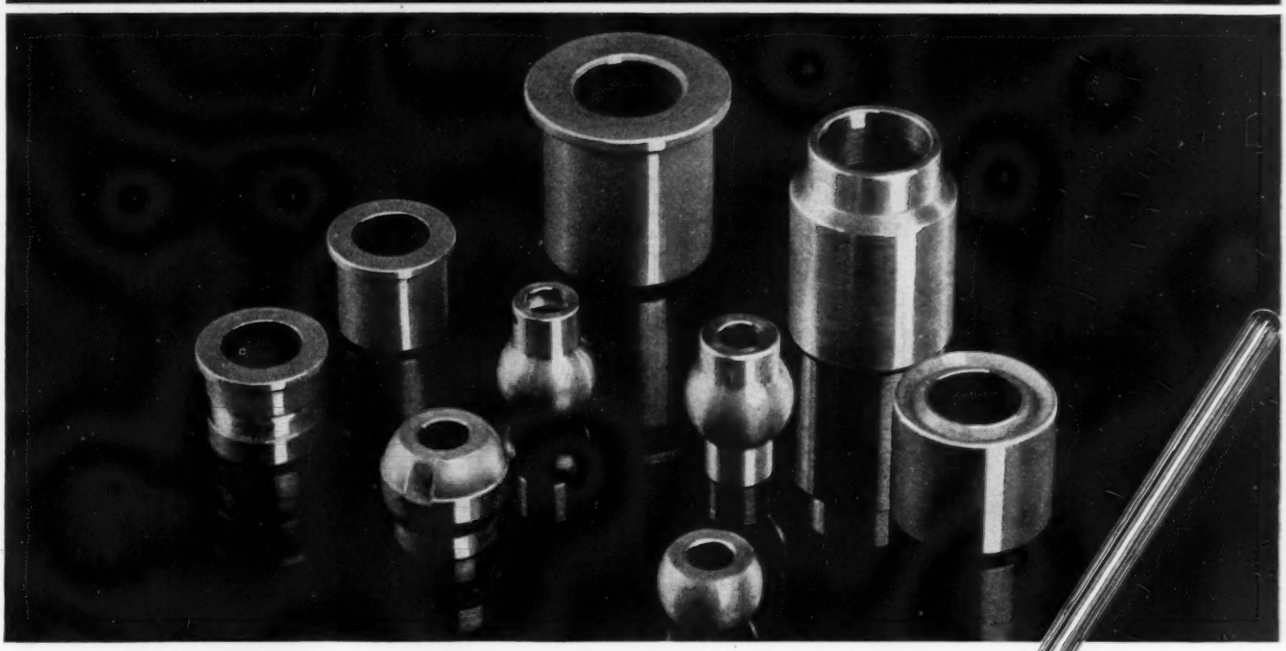
Ralph B. Hood, who for the past three years has been doing consulting work for the textile industry, with headquarters in New York City, has accepted the position as assistant to J. B. Harris, vice-president of the Greenwood, Mathews and Ninety-Six (S. C.) Cotton Mils. Mr. Hood is a native of Providence, R. I. Much of his recent work has been in connection with spun rayon goods.





Left, turbine-electric printing range drive; note control panel. Right, turbine-generator with chain drive to dry cans . .

Controlled Lubrication



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TIMELY NEWS ITEMS with a TEXTILE SLANT

Morgan Represents Dayton Rubber

William L. Morgan, Greenville, S. C., has been appointed sales representative for textile loom supplies and

Mr. Morgan

roll coverings as manufactured by The Dayton Rubber Manufacturing Company, Dayton, Ohio. Mr. Morgan has been connected with sales-engineering work in textile mills for many years.

◆

Moore to Cover NE Territory for Stehedco

Stephen R. Moore, who has been on the staff of the Philadelphia office of the Steel Heddle Manufacturing Company, covering the Philadelphia, New York and central territory, has been transferred to the New England headquarters at 44 Franklin St., Providence, R. I., where he will handle the New England territory in conjunction with G. H. Hill. Mr. Moore succeeds the late John H. Hill in the capacity of sales representative.

◆

Barton Resigns NOPCO Presidency

John H. Barton has resigned as president of the National Oil Products Company, Harrison, N. J., and will enter other fields of activity. He has been associated with the company for more than 20 years, and his resignation was announced as he passed on the report for the 1939 operations of his company, showing the largest profit in its history.

◆

Townsend of Manhattan Passes

Colonel Arthur Farragut Townsend, chairman of the board of Raybestos-Manhattan, Inc., and general manager of The Manhattan Rubber Manufacturing Division, Passaic, N. J., passed away January 14, at his residence, 298 Greenway Road, Ridgewood, N. J. He was 74 years old. He was one of the organizers of The Manhattan Rubber Manufacturing Company in 1893, and was successively secretary and vice-president, succeeding to the presidency in 1903. From 1903 until 1929, when Raybestos-Manhattan, Inc., was organized, he was president of Manhattan Rubber.

◆

Tide Water Sets Up Southern Office

Tide Water Associated Oil Company, in order to meet the requirements of expanding business in the South, has set up a southern branch for distribution of its products. The new office and warehouse are located at 1122 South Boulevard, Charlotte, N. C. R. H. Mariner is the new regional manager and W. H. Young, Jr., will assist him in a sales capacity.

◆

Haynes Represents Howard Brothers in New England

Howard Bros. Mfg. Co., Worcester, Mass., manufacturers of card clothing, have announced the appointment of Charles A. Haynes as their representative in the northern cotton field, succeeding the late Arthur A. Moffitt. Mr. Haynes has had extensive cotton mill experience, having worked from second hand in carding to a superintendency. He spent many years with the former B. B. & R. Knight organization, and was also with the Edwards Manufacturing Co., Augusta, Maine. More recently he has been sales representative of the Lane Company.

Mr. Haynes

◆

Binder Assistant Manager of Allis-Chalmers Division

H. P. Binder, who has been associated with Allis-Chalmers Manufacturing Company since 1911, has been appointed assistant manager of the Centrifugal Pump Division of the company. Formerly he was active in the field of sales-engineering work.

◆

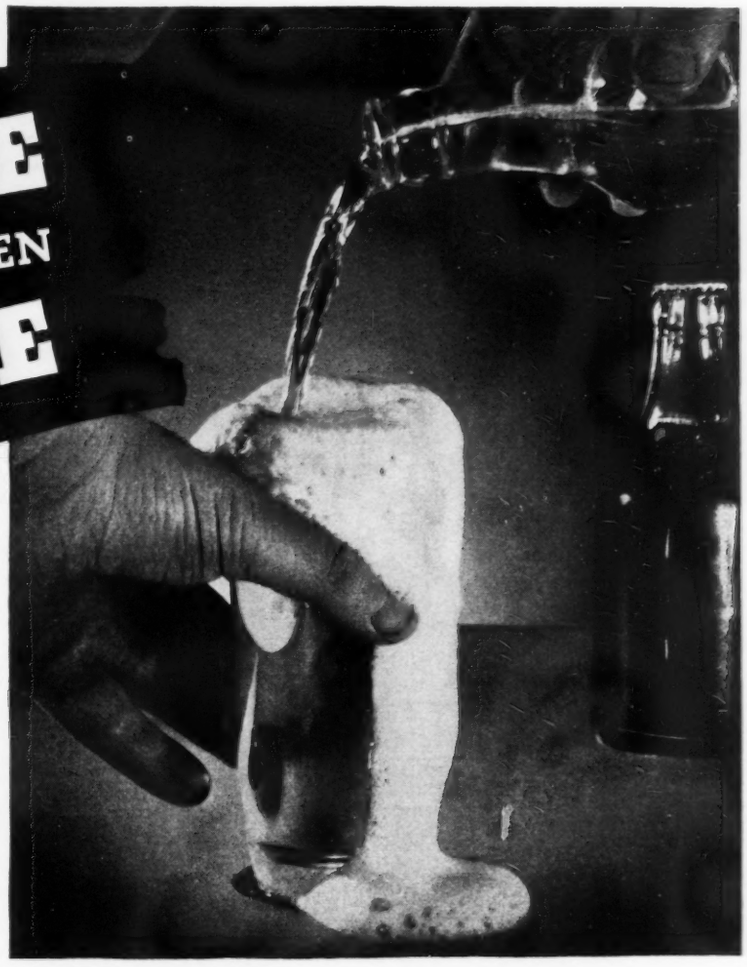
Patent Law Firm

Paul B. Eaton has announced that Robert Brown, Jr., who has been associated with his office for the past eight years, has become a member of the patent law firm to be known as Eaton and Brown. Offices are at 1206 Johnston Building, Charlotte, North Carolina.

New Building of Textile Department at N. C. State . . .

● *The new textile building at N. C. State College, Raleigh, N. C. It is four stories, of fireproof construction, contains about 70,000 square feet of floor space, and cost approximately $300,000. Equipment has been moved here from the old building and approximately $50,000 worth of new equipment has been purchased to supplement existing machinery; a complete woolen unit made by Davis & Furber has been installed in the woolen department. A new 5-cylinder slasher made by Cocker Machine and Foundry Company has been placed in operation and will be used by the textile school and the U. S. Institute of Textile Research for cooperative research on warp sizing of spun rayon and spun rayon combination yarns. The new building contains an insulated room as a testing laboratory, and is equipped with modern testing equipment.*

WASTE IS EASILY SEEN HERE



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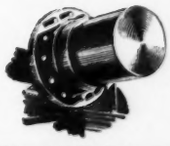

IT WAS UNSUSPECTED

AND COSTLY*

"We have tried several kinds of greases on the bearings in our mills without much success. One would feed too freely – it was ineffective and wasteful. Another highly recommended grade was too stringy – it pulled out of the cups quickly. Still another type fed too slowly, frequently not at all. With each of these greases overheated bearings often necessitated closing down a mill for an hour or more – slowed production materially. Our mills are hooked in groups of eight, so seven others had to sit idle while the one cooled off. *"Then we switched to Tycol Green Cast Greases. Our greasing problem has been reduced to simply filling the cups every eight hours with minimum attention for application which has resulted in not a single overheated bearing." » » » This superintendent, like many others using Tycol Green Cast Greases, gets better protection – more effective lubrication per pound of grease. Here's the reason: The finest cylinder oil is compounded with a minimum of soap in Tycol Green Cast Greases. More oil, less soap. More lubricating oil per pound means more economical lubrication. Less friction . . . maximum production. » » » Drop a line to your nearest Tide Water distributor. He will be glad to show you how Tycol "engineered lubrication" can prevent waste – and save you money.

Distributors of Tycol Products in No. and So. Carolina—Heath Distributing Co., 1122 South Blvd., Charlotte, N. C.

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TIDE WATER DIVISION, 17 BATTERY PLACE
New York, N. Y.

INDUSTRIAL TYCOL OILS-GREASES

TIDE WATER INDUSTRIAL LUBRICANTS

THERE IS A COMPLETE LINE OF TYCOL LUBRICANTS SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE

Earl Heard to Succeed E. W. France as Director of the Philadelphia Textile School . . . .

M. E. HEARD has resigned as director of the textile department of Texas Technological College, at Lubbock, Texas, to accept appointment as director of the Philadelphia Textile School, Philadelphia, Pa. He succeeds at Philadelphia Dr. E. W. FRANCE, who has been connected with the Philadelphia institution for more than 55 years, continuously.

Mr. Heard, a native of West Point, Ga., is a graduate in textiles of the Georgia School of Technology, Atlanta, Ga. He has been associated with the Texas school since 1928, and several years ago succeeded E. W. CAMP as director. His successor at the Lubbock school has not yet been named.

Dr. France, the "grand old man" of textile education in this country, is retiring, after a life-time of fruitful accomplishment in his chosen profession, leaving his mark upon his industry especially in the hundreds of graduates of his institution who occupy positions of importance in this industry.

Mr. Heard

Harris Elected VP of Holyoke Belting

Jack Harris, Spartanburg, S. C., has been elected vice-president of the Holyoke Belting Company, Holyoke, Mass. Mr. Harris has been connected with the company almost continually since 1923.

◆

Davies Heads Penn Salt Market Research

Richard L. Davies has been appointed manager of the newly established market research department of the Pennsylvania Salt Manufacturing Company, and will have his headquarters at the executive offices in Philadelphia. The new department is organized to make studies of the market for products now manufactured by the company, or products under contemplation. Market trends and opportunities will likewise be presented to the management for formulation of production and sales policies.

◆

Truitt and Smith with American Viscose

Joseph A. Truitt and Robert A. Smith have become associated with the American Viscose Corporation at the Marcus Hook, Pa., plant, in connection with the sales development department, concentrating on spun rayon. Mr. Truitt, who formerly was associated with the Keystone Spinning Company, will devote his activities to the carpet trade and to mills producing non-clothing woolens. Mr. Smith, lately instructor in textiles at the Central Needle Trades High School, New York City, will specialize on worsteds and clothing woolens.

◆

John R. Brown Now with Arnold, Hoffman & Co.

John R. Brown, for 13 years general superintendent of Stonewall Cotton Mills, Stonewall, Miss., has become sales representative of Arnold, Hoffman & Co., Inc., in Alabama, Louisiana, Mississippi, and Texas, with headquarters in Meridian, Miss.

W. C. Cobb has been transferred from this territory to Charlotte, N. C., by Arnold, Hoffman & Co.

◆

New Publications of Textile Interest

The American Brass Company, 25 Broadway, New York City. Anaconda publication E-9, descriptive of new line of large size welded fittings that are available in either copper or Everdur copper-silicon alloy.

The Warwick Chemical Company, West Warwick, R. I. Technical data bulletins concerning: Sulfanole P.B. & Sulfanole C.P., synthetic detergents; Appramine C and Appramine 40, cation-active softeners; Hydrolux D, for vat printing and discharge printing; Glysorbine, a hydroscopic and plasticizing agent, primarily suited for silk throwing.

The Permutit Company, 330 West 42nd St., New York City. A two-page illustrated leaflet describing the master pilot valve (manual or automatic), wherein many valves can be adjusted to operate in correct time sequence.

Alemite Division of Stewart-Warner Corporation, Chicago. Folder descriptive of Lubriguard fittings and bushings, to prevent over-lubrication of anti-friction bearings.

American Viscose Corporation, 200 Madison Ave., New York City. "Important Facts About Spun Rayon", prepared especially for trade and consumer distribution. Compiled to meet the need for handy form presentation of sales information.

The Rodney Hunt Machine Company, Orange, Mass. Catalog No. 539 covering line of Tru-Shade stainless steel dyeing machines.

Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Complete directory of engineering literature, bulletins and the hundreds of different products that it makes. Handy size 32-page book. Lists 350 bulletins and other engineering aids, and 1,610 products.

Mechanical Goods Division, U. S. Rubber Company, 1790 Broadway, New York City. 34-page booklet entitled "U. S. Hose Hints", designed to enable customers to get more service out of the various types of hose used, and to help select the correct hose for specific purposes.

Link-Belt Company, 307 N. Michigan Ave., Chicago, Ill. "Link-Belt Conveyors in American Industry", a new 48-page, 8½x11-inch, copiously illustrated Book No. 1700.

The Truscon Laboratories, Detroit, Mich. Literature descriptive of Truscon aluminum chromate, said to be outstanding because a powerful and inhibitive pigment has been incorporated into the aluminum paint.

The Fostoria Pressed Steel Corporation, Fostoria, Ohio. Folder No. P.S.-5, descriptive of Para-Sphere reflectors for infra-red lamps.

Acme Steel Company, 2840 Archer Ave., Chicago, Ill. Interesting and informative folder on the proper reinforcement of all types of shipping packs. Identified as Form Ad 14, it contains 59 sketches showing how various products can be effectively and economically strapped again pilferage and damage.

The Stewart Iron Works Company, Inc., Cincinnati, Ohio. Illustrated catalog (No. 79) on the various types of fences offered by the company.

General Electric Company, Schenectady, N. Y. "New Horizon", by **Matthew Luckiesh**, a booklet bringing some interesting glimpses of the future of the electric utility industry.

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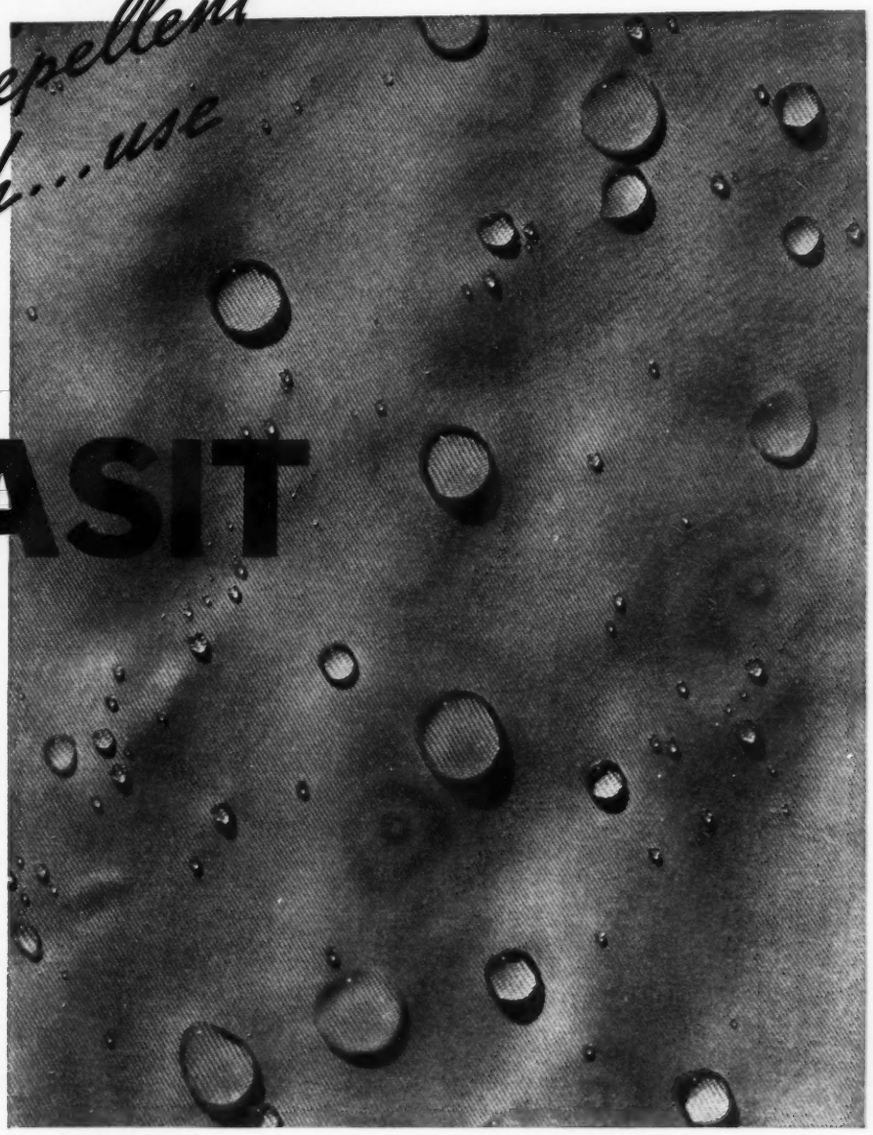

RAMASIT is a one-bath water repellent finish which, because of its low cost and ease of application, can be used on all grades of merchandise. It forms stable emulsions which are easily applied to cottons, rayons, silks and woolens on the quetch, padder, jig or beck. Ramasit imparts a superior water repellent finish. It leaves the fabric air porous and gives a soft and full handle. Information and samples will be sent at your request.

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PERSONAL NOTES
About Men You Know

L. D. Swearingen, formerly technical supervisor of the Winnsboro (S.C.) Plant of the U. S. Rubber Company, which has headquarters at Hogansville, Ga., has been transferred to the same position at the newly acquired tire cord mill at New Bedford, Mass., formerly operated by Fisk Rubber Corporation. (See page 68.) H. Gordon Smith, general manager of the tire cord mills of U. S. Rubber, assumes responsibility of management of the new plant also. D. J. Brightman and F. L. Burns, who were respectively manager and superintendent of the New Bedford plant, will continue in these same capacities. Donald Carroll has been transferred from Hogansville to Winnsboro to succeed Mr. Swearingen, and W. A. Newton has been transferred from Winnsboro to Hogansville to succeed Mr. Carroll as technical supervisor of the Stark Mills of the company.

Robert T. McWade has resigned as general superintendent of the Brookside Mills, Knoxville, Tenn., to become general superintendent of Joseph Bancroft & Sons Cotton Mills, at Reading, Pa. B. W. Bingham is now general superintendent at Brookside Mills, and James Oates was promoted from overseer of carding to superintendent of carding and spinning succeeding Mr. Bingham, and J. A. Parker has been made overseer of carding succeeding Mr. Oates, with Ira L. Ashe succeeding Mr. Parker as assistant overseer.

W. S. Pepperell has become purchasing agent of Carter Fabrics Corp., Greensboro, N. C., and South Boston, Va.; Cleveland Cloth Mills, Shelby, N. C.; and Slater Mills, Slater, S. C. His headquarters are at 611 Jefferson Standard Building, Greensboro, N. C. Mr. Pepperell for several years has been purchasing agent of Burlington Mills, Inc.

S. L. Stack, formerly general superintendent of the Jefferson (Ga.) Mills, has accepted the position as superintendent of the Sanford (N.C.) Cotton Mills, succeeding D. G. Floyd, resigned.

John Scott, purchasing agent and manager of yarn sales of the Pomona Manufacturing Company, Greensboro, N. C., has resigned to accept a position with the Gate City Life Insurance Company, Industrial Hospitalization Division, Greensboro.

Joe S. Gammon has become overseer of spinning, spooling and warping at the Indian Head Mills, Nashua Mfg. Co., Cordova, Ala. Until several months ago, Mr. Gammon had been connected with Avondale Mills, Sylacauga, Ala.; and previously had been with the Exposition Cotton Mills, Clark Thread Co. of Ga., and Lanett Mill of West Point Mfg. Co.

J. A. Scroggins has become overseer of weaving at Opelika Mills, Opelika, Ala., succeeding R. A. Burt, resigned. Mr. Scroggins was formerly superintendent of the Alabama Mills, Inc., plant at Russellville, Ala.

Douglas Pidgeon, formerly associated with Stunzi Sons Silk Corporation, has accepted a position with American Viscose Corporation, where he will assist Pierre Sillan in the fabric development department.

L. C. Leagan has been promoted to assistant overseer of carding at the Ninety-Six (S.C.) Cotton Mills.

C. A. Davis, for some time associated with the manufacturing division of Marshall Field & Company, Spray, N. C., has been made general manager and vice-president of the Spencer Mountain Mills, Gastonia, N. C. Mr. Davis was at one time superintendent of the Pilot Mills, Raleigh, N. C.

Richard Bottomley, night superintendent of the Esmond (R.I.) Mills, and connected with this company for the past 30 years, has retired at the age of 67.

Walter T. Jenkins has been elected vice-president of the Rock Hill (S.C.) Printing & Finishing Company. He has been manager of the plant since the beginning of the organization.

George Cross, formerly overseer of carding at the No. 2 Plant of the Bibb Manufacturing Company, Macon, Ga., has been promoted to night superintendent of this mill.

T. R. Stapp has been promoted to secondhand of weaving at the Monroe (Ga.) Cotton Mills.

W. R. Connelly has been promoted from overseer of spinning to assistant superintendent of the Hampton Division of Pacific Mills, Columbia, S. C.

John T. Chalmers, formerly overseer of weaving at Mathews Cotton Mills, Greenwood, S. C., is now connected with the Inman (S. C.) Mills.

Carl C. Mattmann, Jr., of A. M. Tenney Associates, Inc., has been elected president of the American Association of Textile Technologists. Rudolph Semmler, Duplan Silk Corp., is first vice president, and James Hagen, Callaway Mills, is second vice-president.

Raymond Ratcliffe, superintendent of the Town House Hosiery Mill, Chilhowie, Va., has resigned to return to the Wallner Mills, Pulaski, Va., with which he was associated five years ago.

T. W. Bridges has been promoted from instructor to director of the textile school which Marshall Field & Company conducts for the benefit of their employees at Leaksville-Spray and Draper, N. C. Mr. Bridges is a graduate of the textile school of North Carolina State College and plans to attend that institution this summer and pursue graduate work.

W. C. Ariail, formerly with Erlanger Mills, Lexington, N. C., has accepted a position with Mills Mill, Woodruff, S. C. Mr. Ariail is a graduate of the Textile School of North Carolina State College.

Obituary

Arthur W. Shuttleworth, president, Mohawk Carpet Mills, Inc., passed away at his winter home in Delray, Fla., at the age of 53.

Samuel M. D. Clapper, vice-president of Cannon Mills, Inc., passed away the middle of January at his home in Strafford, Pa.

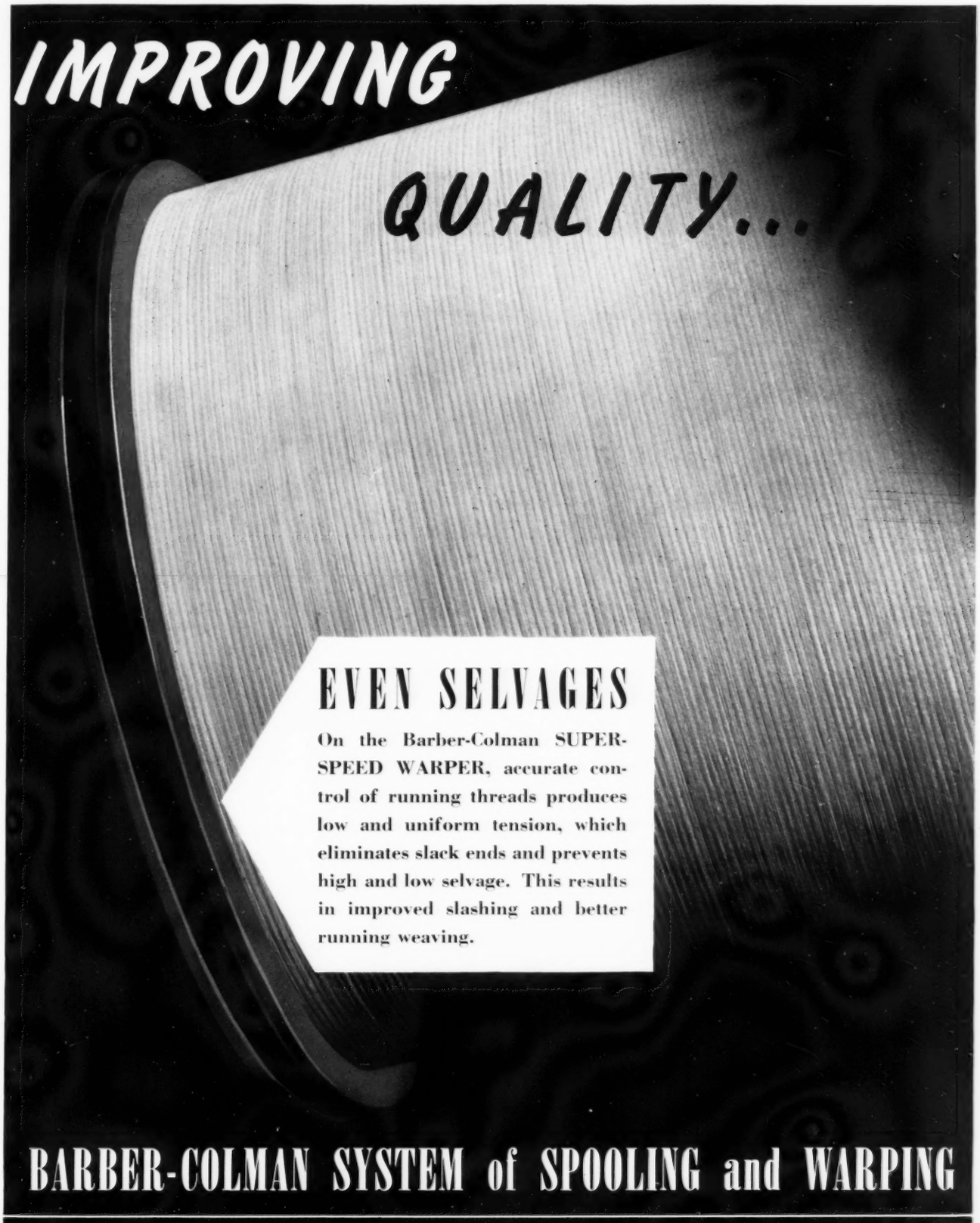
Robert Milton Painter, 53, superintendent of the Superior Cotton Mill, Long Island, N. C., passed away December 28.

Charles C. Fead, president, J. L. Fead & Sons Co., hosiery manufacturers, Port Huron, Mich., passed away recently.

L. L. Hardin, 62, secretary-treasurer of Hampton Spinning Mills, Clover, S. C., passed away the first part of February.

Harry G. Hunter, 59, president of Bowen-Hunter Bobbin Company, of East Corinth, Vermont, passed away in Concord, N. C., on January 28, following a heart attack.

C. E. Davis, superintendent of the Bama Cotton Mills, Enterprise, Ala., died suddenly on February 11, following a heart attack.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QUALITY...
EVEN SELVAGES
On the Barber-Colman SUPER-SPEED WARPER, accurate control of running threads produces low and uniform tension, which eliminates slack ends and prevents high and low selvage. This results in improved slashing and better running weaving.

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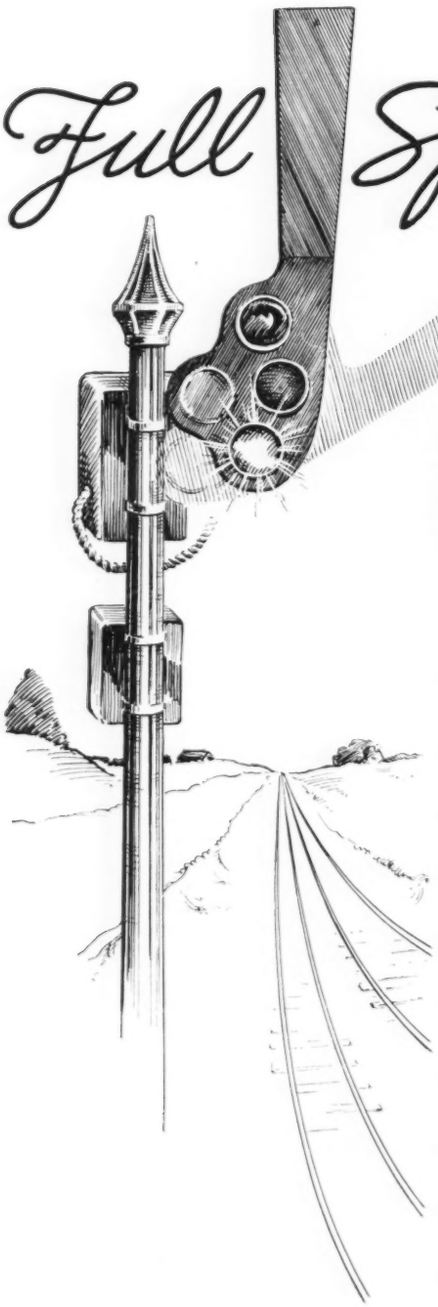

Full Speed AHEAD... *with* CAUTION

We are going through an active period of rapidly changing conditions... Our only assurance regarding the future is that it will bring more changes.

However, we cannot stop forward progress on that account.

While operating at full speed ahead, Sonoco continues their time honored policy of constant and deliberate preparations to meet and anticipate every eventuality that will maintain and improve service to their customers.

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SONOCO PRODUCTS COMPANY

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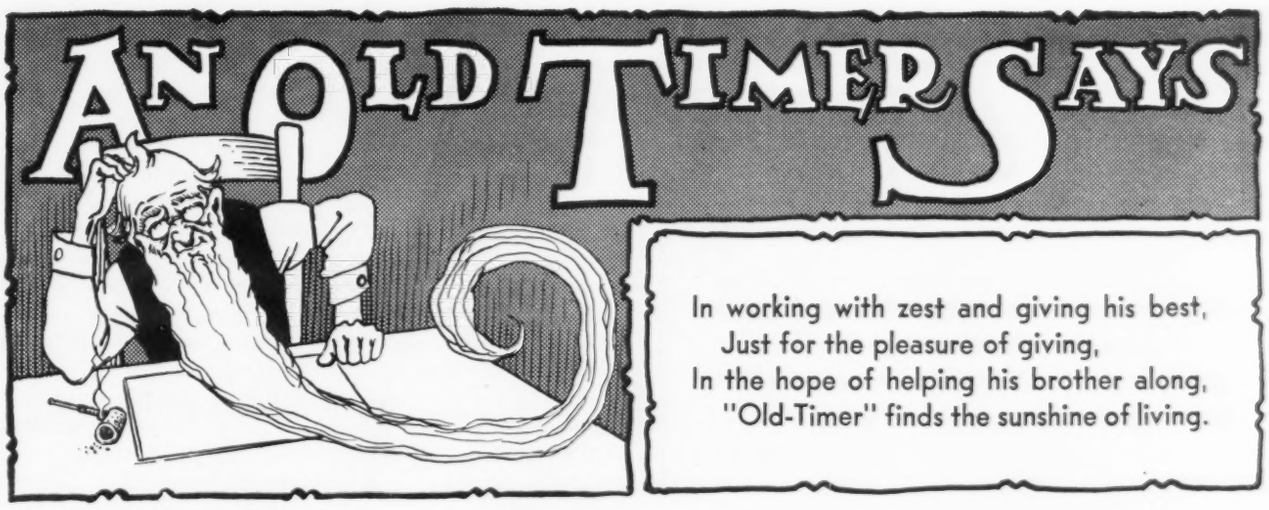
DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

After a Discussion Meeting in Charlotte

(Since this article is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER'S part of the conversation, and those in *italics* represent JIM'S part.)

What do you think of that discussion on ropy or sloughed-off filling, OLD-TIMER*?*

Oh, there were a good many good points brought out, JIM. Such as taking the lost motion out of the spinning frame traverse so the rail would not dwell on the change—taking excessive power off of the loom pick motion—having check straps check the pickers stick correctly; and one man said that variation in yarn numbers would cause ropy filling. I did not quite catch his idea but suppose he knew what he was talking about.

I do not remember, however, anyone's bringing out the speed of the spinning frame traverse. In some cases we have found that speeding up the traverse on filling spinning frames has helped the ropy filling. And of course we all know that to run as heavy a traveler as we can, not to interfere with good running work, will make a good firm bobbin of filling which will not slough off as badly as a loosely-wound bobbin, especially where you do not have too short a taper.

Can you suggest anything else, OLD-TIMER, *that was not brought out at the meeting that you feel would help the ropy filling problem?*

Probably so, JIM. At least I can tell you what practically cut out our troubles with ropy filling on 38s to 45s filling.

Good! I think that would be interesting, so let's have it.

It's a rather long story, JIM, but I'll be as brief as possible. It really goes back to the first feeler quills that mills had made. You remember the first feelers were sliding feelers and the base of the quill was made with a rather long smooth space to accommodate these sliding feelers. In fact the smooth place at the base of the quill was really longer than necessary for a sliding feeler and when the Midget feeler was invented no one ever seemed to think of changing the style of the quill, but continued to order quills by sample as they had always done. And let me digress a little right here to explain that in ordering quills by sample it is possible for a mill to change the style or taper of their quills to such an extent that the taper will be increased, and oftentimes you find mills with quills which have such small top ends—that is, so little wood at the top end of the quill, that the number of quills they lose by breakage is excessive.

Hold on a minute, OLD-TIMER, *how in heck can that happen if the mill sends a sample quill for a quill manufacturer to go by?*

It's like this, JIM: You know, in making any kind of bobbin or quill, whether it is for the card room or for warp or filling spinning, the bobbin manufacturer must be allowed a tolerance for size or gauge fit. Now suppose that tolerance is 1/32-inch. Then there wil be bobbins or quills in the shipment that will be 1/32-inch oversize and others 1/32-inch under standard size. In selecting a sample to send the bobbin manufacturer, suppose you happen to pick up a quill which is 1/32-inch under standard; then when you order quills again suppose you select a sample from this last shipment which is 1/32-inch undersize. You will then have a shipment of quills part of which are 1/16-inch under size—

Yeah, you got a lot of supposing in that tale.

Admitted, JIM, but it has happened and can happen again, and if you will look at the quills in the average mill you will find that they have more taper than necessary and therefore do not have enough stock at the small end or top of the quill. In many mills this condition has progressed gradually in the process of ordering quills by samples for a number of years and the mill management has not noticed it.

But to get back to our original question as to the causes of ropy filling. You will notice upon examining quills in different mills that where the straight part of the shank stops and the ridges or grooves start, there is a decided drop-off, that is, the quill is less

in diameter at that point. You can best detect this by merely drawing the quill through two fingers and noting the perceptible drop-off just as your fingers leave the straight part of the shank. This straight part of the shank I speak of is the part of the quill made straight (without any taper) for the feeler.

Yeah, I see what you are driving at, OLD-TIMER. *If there is a drop-off on the quill at that point, then there will be some loose strands of filling there and those loose strands will start the filling to roping off.*

Exactly, JIM, and as the filling on the straight shank of the quill has no ridges or grooves to hold it, it all ropes up together.

Well, by heck, that sounds O. K., OLD-TIMER, *but you know sometimes an explanation of the remedy for a trouble sounds O. K., but you haven't any way to find out whether the guy knows what he is talking about or maybe what he says will fix the trouble in one mill, but do the fellows in another mill no good at all.*

That's very true, JIM, and sometimes the reason one mill does not receive any benefits from an idea is because the operating executives either do not quite understand what the man is trying to explain or they do not follow his instructions closely enough. Then again, the local conditions may be so different that the idea does not apply—you know that 80 per cent relative humidity is not always the same in your mill as 80 per cent relative humidity is in my mill—

Howszat, OLD-TIMER*?*

Oh, never mind, JIM, let's not get too far away from this subject or problem of ropy filling. The first thing for a mill to do, when they are having trouble with ropy filling, is to find out whether most of it is caused by the filling roping from the small end or top of the quill or from the butt end. If it is coming from the top end, the trouble is usually easy to determine, but our experience has shown most ropy filling comes from the butt end because most any mill can soon fix or overcome ropy filling coming from the small end—

Before you go too far, OLD-TIMER, *please state just how a mill may find out whether ropy filling is coming from the top end or butt end of the quill.*

Sure, JIM—that is, we will give a suggestion or two to start on, and then each man must just keep at the task until he finds out definitely for himself.

First, ropy filling from the top end of the quill usually either knocks out that quill or the loom stops and therefore the trouble is easily traced, but when filling ropes from the butt end it is not so easy to catch (especially if the defect consists of only a few strands of filling) because the quill usually runs off clean. We have at times offered small prizes to weavers who catch a loom making ropy filling and stop it, so the overseer or assistant overseer could inspect it and record his findings. We have put on an extra weaver or two to do nothing but try to catch a loom in the act. There are numerous other schemes which may be used, but regardless of how you go about it, it is absolutely necessary to know just where or what part of the quill your ropy filling is coming from in order to go about remedying it intelligently. We firmly believe that most mills having ropy filling today will find that it comes from the butt of the quill and that the principal cause is the design of that quill. We would like to suggest that the mill have a sample of about 500 or 1000 quills made with the ridges all the way down on the quill to within ¾-inch or possibly ½-inch of the butt.

Hold on, OLD-TIMER, *that will keep the feeler from working properly and also cause more waste—*

Yes, JIM, I knew you were going to say that. In fact, that's the statement that most mill men make when this suggestion is offered, but we made quite exhaustive tests with quills made with the ridges all the way down to within ½-inch of the butt. In fact, we ran 1,000 looms in a mill where there were 1,000 other looms on the same number of filling and the same style of goods, same speed of looms, same feelers and same kind of bunch builders on the spinning frames. Therefore we are pretty sure that we are not suggesting something that is impracticable. Anyway, a mill can get enough quills to run one spinning frame and run that filling on the number of looms that filling frame will keep going and find out for themselves whether such a quill will make less ropy filling or not.

(Editor's Note: If any reader is interested and does not understand OLD-TIMER'S *description of this quill we will be glad to send a pencil sketch to make it clear.)*

Then if this type of quill does make less ropy filling than the quill that the mill is regularly using, they can place an order for a reasonable quantity, and when they arrive, the mill can ship that number of its old quills back to the quill manufacturer and have them reworked for a few dollars per thousand. Of course the quill manufacturer cannot rework the old quill to make it like the new quill, but they can improve the old quill considerably by eliminating the "drop off", and also put the small ridges down to within ¾-inch of the butt. And we repeat what we said above, that we do not believe any more waste will be made or that the working of the Midget feeler will be interfered with if it is set properly. Of course you can determine all of this for yourself at very little expense; just order sufficient quills to run one spinning frame and test it out.

Well, good night, JIM—

(Editor's Note: This conversation between OLD-TIMER and JIM will be continued in the next issue.)

As I See It

If you happen to know a man who has done an outstanding job, it may do him more good if you will tell his boss about it than if you merely give him a pat on the back.

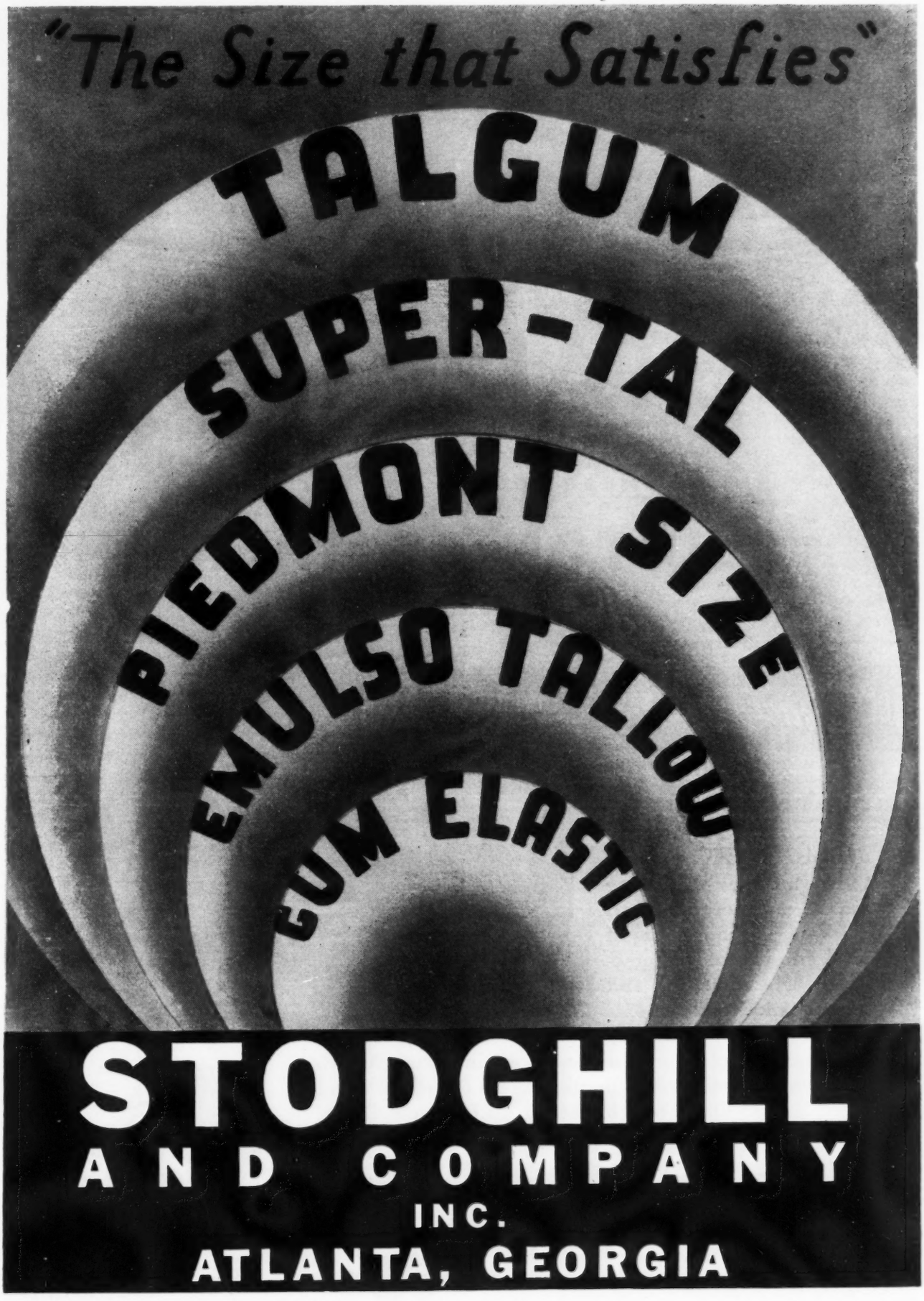
Men from other departments may come into your department to do repair work, make adjustments, do construction work, perform service operations, or they may be loaned to you temporarily for your regular work.

Do you ever go out of your way to make a favorable report on these men to their bosses?

Even though their appreciation may not mean a great deal to the immediate success of your department, it does help very much to make them feel that they are working for a company that has an interest in them.

Besides, it won't do you any harm if some mechanic from the repair department says to one of your men, "Boy, you've sure got a swell boss! He's a regular guy!"—*Glenn Gardiner in "Management Information".*

Shakespeare said, a long time ago, "The web of our life is of a mingled yarn, good and ill together; our virtues would be proud if our faults whipped them not; and our crimes would despair if they were not cherished by our virtues."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HOW OTHER MEN MANAGE

What Causes Wavy or Washboard Shuttles?

EDITOR COTTON:

We are experiencing much trouble in our mill with wavy or "washboard" shuttles. It will be most helpful to us if the readers of COTTON will give us some causes for this trouble, and how it may be remedied.

CONTRIBUTOR NO. 7033

The Proper Picker Speeds and Settings

Some pertinent facts and opinions by four men versed on the subject of opening and picking . . . . . .

ON PAGE 105 of the August issue of COTTON, "CONTRIBUTOR NO. 6926" requested information on settings and changes in his picking equipment and gave the following information concerning the layout of his picker room. His question is repeated in full so that you readers may more carefully follow the answers:

EDITOR COTTON:

For about three years we have been experimenting on our one-process pickers with various types of beaters, beater speeds, beats per inch, fan speeds, settings, and so forth, without any improvement in results; that is to say, the cleanliness of the stock and the breaking strength of the yarns have always remained the same. Of course our aim is to improve the cleanliness of the stock and to increase our yarn's breaking strength, which at the present time is below standard.

However, we think that we could obtain better results in cleanliness and breaking strength if we replaced our present 3-blade Kirschner beater, making 32 beats per inch, with a regular 3-blade beater with the same beats per inch, and if we increased the present beats per inch of our Buckley and 2-blade intermediate beaters, let us say, from 16 and 14 to 18 and 25 beats per inch. What do you think?

Before making this change we should like to ask the readers of COTTON to give us their opinions and advice regarding our present setup.

We are running 1-inch Middling cotton making a 16-ounce lap, 48 yards per lap, and it takes 6½ minutes to make a lap. Our opening room is equipped with a vertical beater making 600 r.p.m., and a Saco-Lowell No. 12 lattice making 650 r.p.m. Production per hour through these machines is about 1350 pounds. The total percentage waste, including opening and picking, is approximately 2 per cent. The picker speeds and settings are as follows:

Buckley breaker beater 1300 r.p.m.; 2½-inch feed roll 10 r.p.m.; fan 1400 r.p.m., feed roll to beater 3/16-inch; beats per inch 16; 2-blade intermediate beater 1100 r.p.m., 2/16-inch feed roll 24 r.p.m.; fan 1400 r.p.m.; feed roll to beater 3/16-inch; beats per inch 14; 3-blade Kirschner finisher beater 1000 r.p.m.; 3-inch feed roll 10 r.p.m.; fan 1500 r.p.m.; feed roll to beater 3/16-inch; beats per inch 32.

We have had this setup for a year and have had much success, but have not been entirely satisfied with results. Could your readers suggest any helpful changes?

CONTRIBUTOR NO. 6926

Several men answered this question for "CONTRIBUTOR NO. 6926" and the answers are contained in the following letters.

EDITOR COTTON:

Concerning settings and changes in picking equipment, we would suggest to "CONTRIBUTOR NO. 6926" that he would get much better cleaning by slowing his pickers down a little if possible, and perhaps he needs to install an additional cleaning machine. On a job such as he describes, we would always install a Gyrator to take out the light trash that he is evidently worrying about removing with his beaters.

While your correspondent does not say so, I am assuming that he has three pickers, since if he is doffing 48 pounds of lap in six and one-half minutes, that would just about run to 1350 pounds an hour. That is entirely too much per picker. Three pickers should not handle over 1000 pounds to 1050 pounds of cotton an hour for good work. At the production which he is getting and the speeds which he is using, it would be impossible to increase the blows per inch without an exorbitant increase of beater speeds.

He does not state what kind of Buckley beater is used, but if this is running 1300 r.p.m., it must not be over 20 inches in diameter, and even so, is running too fast. We do not recommend speeds of over 1100 r.p.m., on 16-inch, 18-inch, or 20-inch Buckleys, and 30-inch Buckleys should not be run over 650 to 700 r.p.m. The speed of 1100 r.p.m. for the two-blade beater is all right, but his carding beater is going too fast, although this speed is perhaps necessary at the high rate of production of the pickers. We do not recommend over 875 to 900 r.p.m. for carding beaters.

The fan speeds all seem high, and that may be causing a lot of dirt to suck back in the picker after the beater has knocked it out. Your correspondent does not state what type of single-process pickers he is using. On ours, we generally employ a fan speed of 1000 to 1100 r.p.m. on breaker and finisher and 1200 to 1400 on intermediate; the intermediate speed being higher on account of the much heavier lap. The net draft is no greater, since the thicker sheet of cotton offers more resistance to the passage of air. In the case under consideration, a fan speed of 1500 r.p.m. on the finisher would be very likely to keep most of the dirt from dropping through the grid bars.

Just at a guess, I would say your contributor needs another picker and probably a Gyrator, Centrif-Air machine or Spira-Whirl cleaner, in addition to his vertical and his lattice. This vertical and lattice are running a little bit fast, but apparently not enough to hurt, since they are both carrying a pretty good load.

Your contributor does not state whether he has adjustable grid bars or some old type bar that may need replacing. A properly set grid bar is quite essential for good cleaning, and if these pickers are equipped with bad bars, he might possibly double his mote box droppings by replacing the bars with some that can be properly adjusted, or by taking the ones he has out; straightening them and dressing them off to remove nicks that may be causing them to choke.

CONTRIBUTOR NO. 6928

EDITOR COTTON:

We would suggest that "CONTRIBUTOR NO. 6926" change his feed so as to make a lap in 8½ minutes in-

stead of 6½ minutes. Then reduce the vertical beater to 500 r.p.m. and the Saco-Lowell No. 12 lattice to 500 r.p.m. The fan speed on the Buckley breaker should be 1000 r.p.m. and the feed roll set to the beater at ⅛-inch. On the 2-bale intermediate beater the fan speed should be 800 r.p.m. and the feed roll to the beater set ⅛-inch. Reduce the fan speed on the 3-blade Kirschner to 1000 r.p.m. and set the feed roll to beater 1/16-inch. These changes will increase the waste percentage to about 5 per cent, and will give cleaner and evener work, and being evener it should in turn be stronger. We certainly think it would be unwise to discard the Kirschner beater for a plain beater.

CONTRIBUTOR NO. 6934

◆

EDITOR COTTON:

This is an answer to "CONTRIBUTOR NO. 6926" who may make changes in his picker room.

This man says that he has been running his machines under the present set-up for a year, and successfully. Sometimes, after giving so much attention to improvements of certain operations, we must let well enough alone and forget the whole thing for awhile.

"CONTRIBUTOR NO. 6926" thinks he could improve the cleanliness of his cotton. Granted! As these pickers go, some 1½ to 2 per cent of waste is usually removed. Suppose he succeeded in wrenching off another half of one per cent, I would be inclined to think that this would be a taxation on his good fibers, and the chances are that the same amount of little stuff would go through just the same.

The picker is really an opener and is meant to open the cotton for further treatment. The card is well built to do the cleaning.

It is impossible to secure a better breaking strength in the yarn by giving more or less beats per inch to the cotton in the picker. Any carder that claims his pickers are responsible for low breaking strength in the yarn must indeed have a very poor arrangement in his pickers. He probably has a battery of machine guns instead of 2- or 3-blade beaters.

While the 32-beats of this contributor's Kirschner beater are absolutely within bounds, I see no reason why he should exchange it for a blade beater. Kirschner beater is good for 1-inch cotton.

Nevertheless, his Buckley beater speed of 1300 r.p.m. sounds a little high, but his beater speeds as a rule, are conservative and quite proper. Also, it seems to me that a 16-ounce per yard lap is mighty heavy feed for his cards, which have nearly all the cleaning to do.

There is positively such a thing as overdoing the cleaning process in the picker. The symptoms are stringy appearance of the cotton wound on the lap. I would very much prefer to sacrifice half of one per cent waste than have the card clothing become overstrained by opening up strings, instead as it should be, by feeding neatly opened cotton.

A way to obtain better cleaning is by loosening dirt, pods, etc. The way is not by raising beater speeds on account of too many good fibers being knocked through the grates, but through cleaning smaller bulks at the same time at conservative speeds. This, of course, calls for more opening machinery.

The vertical opener of "CONTRIBUTOR NO. 6926" is doing some 1350 pounds per hour, which is correct. Suppose he had two additional pre-cleaning machines of the Buckley or Centrif-Air type, each doing half of the vertical opener's production, but both of them delivering their "half bulk" into the vertical opener; this would constitute an additional effective cleaning at no overstrain to the fibers. The intermediate picker, which is now practically extinct, took out its share of waste and dirt. In replacing this section of machinery, are we not compelled to replace some ten intermediate pickers by a pair of pre-opening machines?

As to picker speeds in general, we will be satisfied with the standard recommendations of our able textile machinery makers, who are great researchers in this field. If this contributor does not have stringy cotton he might well leave his speeds and set-up alone and find additional ways of cleaning such as installing dust trunks or pre-opening machinery working in parallel fashion, etc. By the way, are the cards of "CONTRIBUTOR NO. 6926" doing their share of the work?

CONTRIBUTOR NO. 6935

◆

EDITOR COTTON:

"CONTRIBUTOR NO. 6926" has asked an interesting question. Assuming we have a 3-cage section of single-process pickers, running 1-inch Middling cotton and our aim is to improve the cleanliness of the stock and increase the yarn's breaking strength:

The grid bars in the vertical opener should be open and only clear the beater bars about ½-inch with 600 r.p.m. The same settings pertain to the lattice opener at 650 r.p.m. with production at 1350 pounds per hour. The doffers in the picker hoppers should be set to clear the spikes on the lifting apron about one inch and the apron speeded up to take care of the proper amount of stock being fed into the pickers. This will help open the cotton better for the beaters. The Buckley beater should not exceed 20 beats per inch with a setting of 3/16-inch from the feed roll. The 2-blade intermediate beater can be replaced with a Kirschner beater at 1200 r.p.m. and 40 beats per inch, with a setting of 3/16-inch from the feed roll. The finishing beater should also be a Kirschner with the same settings and speed as the intermediate beater.

The fans should not exceed 1250 r.p.m. and the dampers opened enough to carry the stock to the screen properly. This will cut the air current down so that the trash may drop in the mote boxes instead of being carried to the screen by air. The angle of the grid bars are very important and should be set to clear the beater at the top ½-inch and ¾-inch at the bottom.

A 14- or 15-ounce lap is easier to clean than a 16-ounce lap and works better on the card. The production of each picker should be based on not over 325 pounds per hour for good cleaning.

From my experience on a wide range of cottons and staples, and also synthetic fibers, I have found that the Kirschner beater in all cases gives better work when run about 1200 r.p.m., giving about 40 beats per inch, both from the standpoint of cleaning and break-

ing strength.

The waste on Middling cotton quality work should total at least three per cent including opening and picking. However, anything that might be done at the pickers that would improve the cleanliness and breaking strength could easily be broken down on some of the following processes, which, of course, is not to be considered in the question.

CONTRIBUTOR NO. 6936

Some Thoughts on Slub Catchers

The author describes here the "ideal slub-catcher." What is your opinion of it? . .

EDITOR COTTON:

A textile manufacturer with a 30-year background in spinning and weaving the finest cloth made in the United States once told me, "I don't care how much the spooling costs provided I don't ruin the yarn and the slubs are checked. If you've got slubs they've got to come out in the spooling. I'll save five dollars in the cloth room for every fifty cents I spend on the spoolers."

The great majority of cotton mills have not, in slub catching, gone beyond the old guide that was in use 50 years ago, which consisted of rigid fixed blades with a slit between them. Over a long period I have noticed that from two to more than a half-dozen slub-catchers are patented every year, scarcely any of which have ever had even a limited application in the leading mills of New England; I cannot speak for the southern manufacturers. They are not used because slub-catchers have not been made that will operate satisfactorily. It appears that the poor performance of the slub-catchers is the result of the application of wrong mechanical principles. I shall describe what I believe to be a slub-catcher that will carry out its functions satisfactorily, but first let us see what an ideal slub-catcher should do. It would:

(1) Catch as many slubs as desired; (2) catch slubs easily and at any speed; (3) catch slubs with an economy of motions in re-threading; (4) catch slubs without shaving yarn; (5) catch slubs without clogging the device with lint, nits or waste; (6) catch slubs on a device without wearing parts, or on parts economically exchangeable and so avoid expense.

The Ideal Slub-Catcher

Let us conceive of a substantially vertical resilient blade of spring steel, detachable, yet held secure over a smooth yarn runway. The lower end of the blade is sharpened and spaced at a slight distance above the surface (or yarn runway) to permit the passage of the yarn between the two. The blade is disposed at almost a 90-degree angle with respect to the surface. Thus if the blade be sprung laterally in the direction of thread travel the lower end of the blade will approach or close upon the surface. But the springing of the blade in the opposite direction will cause its end to recede from the surface. It will thus be seen that by providing adjusting means for laterally springing the blade, the distance between its lower end and the surface may be adjusted with precision according to the size of the yarn to be run, let us say by a finely pitched screw against the rear side of the blade adjustable to the exact point desired according to the yarn count. A suitable indicator could, of course, act with the screw.

Now the blade at no moment touches the yarn traveling below except when the enlargement (the slub) engages it, bringing its lower end against the surface where the yarn will be broken. Absence of shaving is indicated in the fact that the blade (which does the whole operation) never touches the yarn, only closing instantly upon it when the slub springs the blade from an open to a closed position. The surface or yarn runway is of smooth steel, or equivalent, without jagged or cutting edges. Without detachability as an exchangeable part it is seen that the yarn runway is long lived since the movement of the yarn is imperceptibly but surely from left to right, as the spool fills, and does not permit a sameness of position. The yarn cannot bite into the metal.

The finely pitched screw mentioned previously is locked by a counter screw, and we can increase or decrease the distance between the lower end of the blade and the yarn runway with micrometer precision. Large or small, *all* slubs may be checked if desirable. Room practice or the standards of the individual mill would govern whether only half or all the slubs are to be eliminated.

With rigid fixed blades a hard-nose slub traveling at high speed can escape through. The blades are inert; they offer no counter-action. The slub passes if it may so slightly intrude. But the instant the nose of such a slub engages the spring blade of this discussion the blade, in advance of the slub, is thrust backward automatically, and just as swiftly as the slub is traveling. The slub cannot intrude between the blade and the yarn runway. The yarn is clipped or broken because the slub cannot escape.

When the blade has checked the slub by yarn breakage the force that brought it to a closed position against the runway has been instantly spent. And thus, since it is a blade of resilient spring steel it will immediately spring in the opposite directon, recede from the surface and assume its original position and readiness for action. In such a motion of automatic recession it ejects from the runway and without the nits or lint occasioned by the slub that has been arrested. There is no area to be clogged, or grooves, combs or rigid jagged surfaces in which filaments may collect. Observe also that in the case of nits there is no breakage as they are not so securely attached to the yarn as to be able to thrust the blade backward. (Nits cause frequent breakage in groove-principle devices as a result of accumulative clogging).

As for re-threading it is just as simple and involves no more labor than with the old type guide. The tender slips the yarn in a single motion between the blade and the runway.

We have yet seen no wearing part, with the exception of the guard finger of simple wire (it could be porcelain) holding down the yarn in the rear of the device and whence it goes directly to the spool.

CONTRIBUTOR NO. 7043

Training Operatives for the Card Room

EDITOR COTTON:

We overseers of carding must realize that we have just as big a job in keeping our operatives trained and up-to-date as we have in the upkeep and maintenance of our carding machinery. Supervisors in any department of a textile mill must realize this, but my remarks shall apply principally to the carding department in a cotton mill.

In a mill where the opener and picker room is not large enough to have a full time fixer and overhauler, the card grinders usually look after the picking and opening machinery. In getting a man for the job of taking care of the picking machinery we must be certain that this party is quite reliable. It is necessary that we get a man whom we can trust because we cannot constantly follow in behind this man to determine if the pickers have been so set and properly fixed to do their good work. If the pickers are set in a haphazard manner by this man it is likely to throw the entire mill off balance by the faulty work.

The picker operative should be trained to take the proper amount of poundage off of each bale of cotton when feeding it into the hopper. For instance, if he has 20 bales of cotton opened at one time, it will be necessary that he take just about the same amount of cotton off of each bale every time when feeding it into the hopper. This will keep the mix properly balanced.

Bagging Twine in Stock

He must also be very careful that no pieces of bagging twine get in the cotton and that the grass twine is pulled out instead of being left in the bale of cotton. In one mill where I worked it so happened that the man who was cutting the stitch on the grass twine was letting particles of twine drop into the cotton and it began to show up in the stock later in processing; the mill almost lost the business on this particular order. It was later determined that if this man had pulled the grass twine out instead of cutting it, these particles of grass twine would not have been in the stock.

It is hardly necessary to mention that the picker operative must be trained to keep the cotton level in the hoppers in order to secure an even sheet of cotton all the way through the lap. He should also be very careful in his weighing of the completed lap so that over-weight or under-weight laps will be thrown out. I have seen picker tenders that stand in front of their machines for lap-after-lap, waiting to doff these machines, and never knowing or caring what is taking place in the back of the machine. The operative should certainly have enough interest in his job to walk around the machine and inspect it at regular intervals.

Doff Picker Laps Pronto

Before the laps are doffed the operative should never allow them to continue to roll on the calender roll for any length of time as the head pressure is still on the lap after it knocks off, and this may cause the lap to become longer in length, thereby decreasing the weight per yard for the first several yards of the lap.

After the lap has been weighed the operative should set it on the floor carefully so that the lap will not be disturbed. If this is done the lap will run much better at the card and will not be nearly so likely to split.

In the training of a new operative it will naturally be necessary to teach him how to start a new lap at the picker, but I have found that even the old operatives, who have been on the job a long time, will become careless sometimes, and it is wise occasionally to check up on them. As a matter of fact, I expect we all need checking up on occasionally.

I have found it good policy when showing an operative just how his work should be done, at the same time to explain to him why it should be done properly and some of the benefits to be derived from the good work produced by his carrying out the instructions properly. A man can work so much better when he realizes that by his careful efforts a quality product will be produced. On the other hand, if the man feels sure that the next process can correct any errors he permits to go through, he soon becomes slovenly in his work and the entire mill suffers as a consequence.

In the Card Room

I suppose that the most important training in the card room, other than that of learning to work safely, which should be learned as a sweeper, is that of piecing up the lap on a card. Laps should be pieced when the end is about three inches from the feed roll. When the three inches have gone through under the feed roll the lap that is pieced up behind it will just be going under the feed roll properly, and since both ends should have been pulled out, they are feather-edged, and will make at this point the least thick or thin place.

For the work of cleaning the machines, the operative should be instructed to keep clean brushes or mops about. By the way, only the sides of the cards should be cleaned with mops. Never clean the remainder of the card with a mop because if other than the sides of the card are cleaned with a mop, waste may get into the sliver. The front and back of cards can be wiped off with cotton waste. The clearers on top of the feed rolls must be kept clean at all times, and must be kept turning as otherwise the clearer waste may go into the lap.

The operative should naturally know how to piece up an end on the card properly, but he must be continually checked on to see that he does not let singling and doublings go through. In order to keep up with the operative who makes the bad work, it is wise to let him mark his work with chalk. If the operative does this until he becomes quite proficient at his job, it will no longer be necessary to continue this practice.

The knowledge of human nature takes a great part in the training of operatives in any kind of work, and especially in textile plants. Supervisors must study the human nature of each individual and be ready to approach him or her without causing any antagonism. They must be taught not to play on the job and must be shown that when they are out because of an injury they not only lose their daily earnings but the mill

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must suffer because a less experienced party is put on the job.

A poor practice is the racking up of laps on the back of cards several hours ahead of time for the lap to be put into the feed roll position. If these laps are racked up and must hang there for longer than an hour, they gradually become longer on the bottom side, which naturally gives stretch, thereby decreasing the weight per yard. In the long run, this will cause poor carding. If the overseer will explain to the operative just why the lap will not be in as good condition if left hanging for a long time, going into detail as to the fact that there is very little holding the lap together, the operative will understand and will be very careful about racking up too far ahead of time.

It may be that some overseers will disagree with me on the foregoing statement, in order to prove whether or not this is true to himself, let him hang a lap on the rack over the week-end and take weighings every hour while the lap is being run off and watch the variation in the card sliver. Naturally, it will be of a greater disadvantage to mills running fine numbers.

Dummy Clocks for Card Doffing

The operative should not permit the full cans to run too long because the work may be soiled from the coiler head. Also, if the cans become too full the coiler will run out of alignment causing wear on the gear that is in mesh with the coiler. We have found it to be a good practice to make a dummy clock to doff by. That is, after the doff is made, we know approximately how long it will be before the next doff is supposed to come off, and the clock can be set ahead so that the operative can know exactly when he should doff again.

When making the dummy clock the board should be about 24 inches in diameter, cut round, painted white, with the numbers stenciled on in black from 1 to 12, and the hands cut out of black belting. A nut could hold the hands in place to point to the proper time. This little dummy clock will also prevent one shift from throwing the extra doff on the other shift and will serve as a work equalizer.

Piecing-up in Drawing

In my opinion the drawing machines are the most important machines in the carding department. In training an operative to run these drawing frames it is very important that we teach him to piece-up properly. If he is permitted to piece-up by spitting on his hands and twisting the ends, this will cause bad work in later processes. Wetting the stock at this point slows up the top rolls and the stock goes through without being drafted properly. Even if this wet lump of pieced-up sliver goes through the trumpet, it is likely not to be drafted in the next process and may go on through it to the roving. If the overseer will explain to the drawing frame tender just what happens when he makes a piecing-up in this manner, the tender certainly will not wish to do it again.

In my opinion a properly pieced end on drawing is made by pulling the end of drawing and feather-edging it, then lap each end over the other about two inches, split the end that is held in the left hand by placing the thumb over half of its side, pick up the other side with the other hand and give a slight twist to the left with the right hand and roll it gently. This end will then go through the succeeding processes without any noticeable defects.

If the operative understands that by properly taking the weights off of the rolls over the week-end he will not cause any bad work on Monday morning, he will be certain to do this in the proper manner. This particularly applies to leather and synthetic top rolls.

As a matter of fact, I think that in the training of operatives the whole thing goes back to explaining the why and wherefore of a certain job. As overseers, if we were doing our work in such a manner as to be kept in the dark and not to know what is going on in later processes, we could not do nearly so good a job as we could when we know the full details. We should be fair with our operatives and realize that they have average intelligence and are interested in their jobs and want to know the results of the jobs they are doing.

CONTRIBUTOR No. 7042

Foremanship

EDITOR COTTON:

More than ever before the textile mills are emphasizing the value of good foremanship as an excellent manner of maintaining satisfactory personnel and industrial relations. But every foreman, if he is to remain on his job, must occasionally take stock of himself.

A foreman must be familiar with all phases of his job before he can have the respect of those who are under his supervision. If he does not know his job, soon an undesirable atmosphere of "He doesn't know any more about it than I do" is created among his workers. High morale cannot thrive in such an atmosphere.

It cannot be said that a foreman knows his job if he is familiar only with the mechanical and technical functions of it. The human element is equally important. Some of the things he must do are: Know his operatives, exercise polite firmness, show no favorites, show interest in his operatives, entertain any suggestion no matter how insignificant it may seem, be polite but not weak, treat an operative as he would like for his own foreman to treat him, and show appreciation for the services of his operatives.

To create high morale among the operatives, and a respect for the foreman, the foreman must first be worthy of the position he holds. One way to do this is by working his way from the bottom and obtaining his position by superior knowledge of the job. If he does this, his operatives will say that he deserves the job and they will be happy that he gets it.

No one likes to work for a person whom he is ashamed to recognize when with friends. A foreman should set the standard of living. By this, I do not mean that he should wear fine clothes, have a large car and home, etc., but in his relationships with his fellow men he should live and act above reproach.

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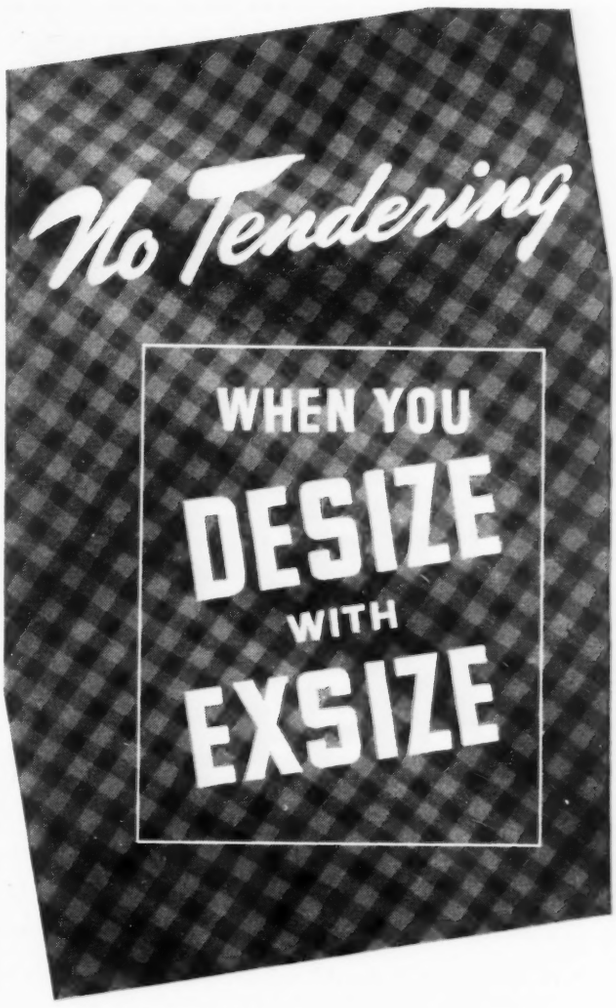

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EXECUTIVE'S CATECHISM

THE QUESTIONS	THE ANSWERS
What is the best way to delegate responsibility?	"Hire the right kind of shoulders and pile it on."
How can an executive build initiative?	"Be a good listener."
What is the best way to get co-operation?	"Co-operate yourself—the unit is two, never one."
How should mistakes be pointed out to executives and to those under them?	"Never point out a mistake in an offensive way; but never fail to point it out."
What is the best way to train men for larger responsibilities?	"Responsibility quietly delegated is a business developer."
Does persistency play a part in success?	"Persistency plus consistency is success."
Why is making friends of subordinates important?	"You're a half-way success until you can call your associates by their first names."
What is the worth of a man with a capacity for much and varied work?	"The man with capacity for much and varied work is an inspiration."
How do you make your personality felt in the organization?	A modest blank.

Contributor No. 7022

This relationship should exist not only on the job but in every event of life.

A man's job is not measured only by the intervening time between arrival and departure from the job. It is also measured by his outside activities and relationships. "If a man would cheat us at a game of golf, he would cheat us on our payroll tickets or any other phase of our job" is the attitude that will be taken if the foreman's conduct away from the job is not above reproach.

The foreman must be very careful of his associates. All the morale that has been created can be destroyed by being seen in questionable company and engaged in questionable activities.

The foreman should take part in all outside activities that his operatives are interested in. When asked to take part he should never refuse if it is possible to participate.

These principles are simple and easily applied. They will pay dividends in the form of a higher quality of work, a reduced labor turnover, and more pleasant human relations if they are put into everyday practice.

Every company is interested in cost reduction. A great savings may be effected by reducing labor turnover. Labor turnover may be reduced by an atmosphere of desirable working conditions. Properly trained foremen can do much toward maintaining a high morale among operatives.

CONTRIBUTOR No. 7023

Checking the Loom to Install New Shuttle

Some helpful pointers on fixing looms to increase the life of shuttles . . . . . .

EDITOR COTTON:

At our plant we are obtaining a pretty good average life from the shuttles that we use, and we attribute it to good loom fixing and keeping a constant check on the loom. The following items should be inspected and fixed when putting in a new shuttle:

The swords should be kept tight at both top and bottom, and there should be no lost motion end-ways or up and down in the rocker shaft. On the protector rod, have just enough tension on the protector rod springs to pull the daggers down when the binders release the shuttle. The daggers should not touch the frogs, but should be off about 1/32-inch when the shuttle is in the shed, and clearing the frog steel with the shuttle in the box enough not to allow the loom to bang off with the shuttle in this position. It should be determined that both daggers are protecting when the shuttle is in the shed.

The binder springs should not be too tight. Check the lugs with the lay on front center to see that there is not too much loss motion and that the lugs are not too tight with the lay in this position. The bottom of the lug should be eight inches from the heel bolt; we have found that an 8-inch quill is ideal for measuring this distance.

The loom must pick on top center, neither early or late. Take all lost motion out of the crank arms. The reed should be held firmly by the reed cap, and of course, it must be in alignment with the back boxes; also, it should be squared.

The transferrer should be checked to see that it is not too deep and that it is not rolling the bobbins into the shuttle. I think that the transferrer should be ⅛-inch above the rings on the bobbin when the transferrer is at the lowest point; this applies to looms running at high speeds.

The shuttle feeler should be checked with the shuttle in the box on the battery end. Determine that the feeler will not allow the bobbin to be transferred unless the shuttle spring will catch all three rings on the quill. Also, see that the shuttle is not going too deep in the shuttle box on the battery end. The bobbin should be carried straight down by the transferrer into the shuttle without jerking the shuttle backward.

The parallel motion is important; the parts, such as the parallel shoe, tongue and plugs must be in good condition. The picker naturally must be parallel the full stroke of the picker stick, and the stroke must be correct. The parallel spring must not be too tight as this will require just that much more power to pick.

The binder is supposed to release the shuttle on the forward sweep of the picker stick. The binder bushing when properly set is turned so that the binder will be as far back as it needs to go.

Of great importance is to see that the shuttle is boxed straight, with the point of the shuttle in the center of the slot in the lay end plate—for the full

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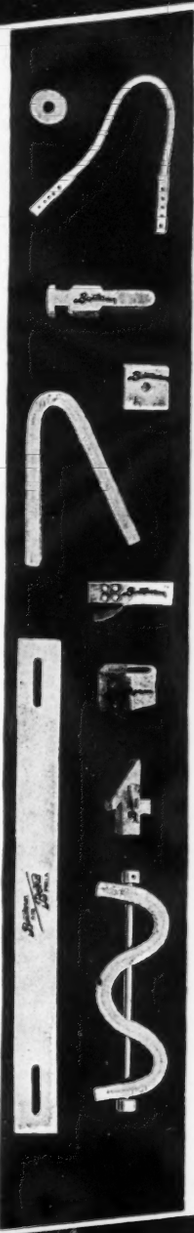

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stroke of the picker stick. Do not have what is known as the fishtrap shuttle box—that is, open wide in front with the back of the box pushed way in, but have the box front plate straight all the way out.

Other things to watch are to see that the harness are set correctly, that there is leather in the lay end plates, that the leather bunters are in good condition, and that the loom belt is kept at the proper tension.

If the loom fixer will practice the foregoing when putting in a new shuttle he will increase the life of the shuttle and will have a better running job.

CONTRIBUTOR NO. 7040

Pieces in Quill Can

EDITOR COTTON:

All of us in the weaving department are confronted with the problem of keeping the pieces of bobbins out of the quill can—that is, bobbins of yarn that have not entirely run out. We are trying at our plant to eliminate as much of this as possible, because it is a practice that is inexcusable. Given herewith are some suggestions that may prevent pieces being left in the can, which we are following at the present.

The weaver should not be in haste to get the looms started and let the loom flip a quill with any amount of yarn on it into the quill can. If the loom is out of good running order and pieces are in the can, the weaver should replace the quill in the battery and flag the loom for the fixer. If the weaver has a quill in the shuttle with faulty yarn on it, he should put it on the rack at the back of the loom, or twist (not cut) the yarn off of the quill. Cutting the threads with a knife sometimes cuts the wood of the quill, making it no good for further use. He should also remove yarn from the pieces on the floor when he is in doubt as to the number of the yarn.

If more than two or three quill pieces are found in the can, the loom must be flagged at once, or other pieces may be made, and faulty cloth may be the result where filling is dragged into the cloth. A quill should never be broken if it has usable yarn on it.

The battery filler can do much toward preventing pieces being knocked into the quill cans. She should inspect the cans on each filling of the batteries and see that no pieces remain in them. Like the weaver the battery filler should rack all the unusable yarn. If pieces are found in a can on her job, she should use them in the proper looms and not empty them in the filling boxes for another battery filler to use. Short pieces run up quickly, but it is the battery filler's job to use her own pieces on her own job.

It takes both shifts of battery fillers to eliminate waste on filling quills, and each battery filler should go over her job before leaving it and see that there are not pieces to be taken care of by the next shift. If a quill is discovered with usable yarn on it, the yarn should be pulled off until the defect is removed and the quill then placed in the battery. Some of the more common defects on filling are oil, grease, tangled threads, an over-thread running the length of the quill, and soft places near the tip of the quill.

Some of the knots can be seen before placing the quill in the battery, and should be removed before leaving the loom. Failure to do so at the time it is noticed will only mean additional work for the battery filler.

It is a good idea not to place too many pieces in one battery as the loom may use all of the filling before the battery filler can get around again. These pieces can be distributed over several looms.

The loom fixer should go over his stand of looms often looking for looms that are making pieces—and it will be much easier on him if he will fix that loom then instead of waiting until the trouble has become worse. It is also up to him to inspect the pieces of unusable yarn placed on the loom racks, as some of those pieces may be suitable to run.

CONTRIBUTOR NO. 7032

A Letter for "Wash"

EDITOR COTTON:

In the October 1939 issue of COTTON, page 160, "WASH" explains the art of drafting to textile school students. "WASH" is a man of great experience, it seems to me, and I am inclined to believe that his contributions to COTTON'S readers have been of great help in solving various mill problems. But we, as human beings, are inclined to look at things from the standpoint of our own situation.

"WASH" goes on to explain the differences between fluffy and wiry cotton and what these do to the hyperbolic curve on the roving frame cones. He also tells in his article how to find the best adapted cotton for twist through the "squeak method" which, I believe, he has perfected through his long years of experience in the cotton mill. Then he suggests a change in the weight of picker laps in accordance with the character of the stock.

Of course, some carding overseers are able to understand these explanations, but to the textile school students they are perhaps a bit too complicated. A few days ago I talked with a couple of young textile graduates. During the course of our conversation the subject of drafting and spacings of drawing rolls came up, and, of course, one of the young men mentioned "WASH'S" article. Apparently the boys were quite bewildered by "WASH'S" explanations. One of the boys said jokingly, "I wonder if he uses a soundless proof room to find the 'squeak' in the cotton fiber". Quite humorous I should say.

These factors of stapling and grading cotton to find the value of drafting and twisting are of great importance to the manufacturing of yarns. However, they must be simplified and explained in the elementary way, not through methods which take a man 40 years to perfect.

Any system which involves too many factors can not become practical, because one has to cope with something which is called "the human element".

CONTRIBUTOR NO. 7041

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351. Wetsit—Leaflet describing Wetsit, a synthetic aromatic compound with excellent surface tension reducing properties; gives rapid wetting out and thorough penetration; available in three strengths. Jacques Wolf & Co., Passaic, N. J.

352. Lupomin—Leaflet describing Lupomin, a new cation active softening agent for all textiles but especially acetates and rayon crepes; odorless, permanent and easily applied; imparts soft, full feel. Jacques Wolf & Co., Passaic, N. J.

353. Luposec—Leaflet describing Luposec, a waterproofing agent with great stability; soluble in cold or warm water at all temperatures; suitable for all fibres and especially effective in splash-proofing silk hosiery. Jacques Wolf & Co., Passaic, N. J.

354. Vacuum Cup Pulleys—Leaflet describing the new Vacuum Cup Pulley which gives greater production, less power cost, less maintenance cost, and much longer life to belts and bearings. Vacuum Cup Metal Pulley Company, Inc., Detroit, Mich.

355. Air Conditioning in Cotton Spinning—A technical discussion of the need of adequate humidification and controlled air change in the spinning room of the textile mill of today. Ask for Bulletin 539. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

356. Parks Textile Specialties—A 14 page bulletin with brief descriptions of the Parks line—Automatic Airchanger—Central Station and Unit Air Conditioners—High Duty, Turbo and Turbomatic Humidifiers—Automatic Regulation—Traveling Cleaners—Portable Dustless Card Stripper—Humidifier Valves and Accessories. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

357. Caro-Gant—The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant the Warp Dressing that makes stronger more elastic warps with a maximum breaking strength and a minimum reduction in elasticity. Hart Products Corp., New York City.

358. Rhonite Emulsions—Attractive bulletin describing the Rohm & Haas complete line of Urea Formaldehyde Resins for Textile Finishing. Rohm & Haas Co., Philadelphia, Pa.

361. Thaumaphos — The textile detergent — Seven page booklet describing Thaumaphos, the wonderful phosphate. Included is a list of the Thauma brands and a survey of their uses in the wet finishing of textiles. Detergent Products Corp., Atlanta, Ga.

362. Leather Belting Calculator—Handy and attractive calculator for determining belt speeds, horsepower per inch of belt widths, etc., will be sent free on request. J. E. Rhoads & Sons, Philadelphia, Pa.

363. Form 769, Condensed Catalogue—a 40 page pocket size booklet illustrating and describing sewing machines adaptable for practically all phases of the needles trade. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

364. The Superlock—Form 828—an attractive two-color illustrated 6-page folder describing the "Fastest Overseaming Machine in the World". Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

365. Catalog No. C-306—a 32 page Standard Conveyor booklet showing numerous actual installation photographs on roller, belt, slat, chain, wheel, live roller, push bar and vertical lift conveyors—also spiral chutes, tiering machines, portable pilers, lowerlifts, record lifts and pneumatic tube systems. Standard Conveyor Co., North St., St. Paul, Minn.

366. Houghto-Size SR—Leaflet describing a new sizing compound for spun rayon warps which provides high breaking strength, greater elasticity and increased weave-room production at low cost. E. F. Houghton & Co., Philadelphia, Pa.

367. Rayon Oils—Leaflet describing three Houghton products used for throwing rayon, filling yarns for weaving, as softeners in gelatin and similar solutions used for sizing and as softening oils for yarns, knitted and woven fabrics. E. F. Houghton & Co., Philadelphia, Pa.

368. Surfax W.O.—Leaflet describing a new surface-active chemical which possesses unusual wetting out and softening properties. E. F. Houghton and Company, Philadelphia, Pa.

369. Lunkenheimer Catalog 78—136 page catalog describing a complete line of Bronze, Iron and Steel Valves, Boiler Mountings, Lubricating Devices, Air Devices and other specialties. Also included is a section on the thermo-dynamic properties of steam, and a table of shipping weights. The Lunkenheimer Co., Cincinnati, Ohio.

370. Notes on Exsize—Attractive new booklet describing the use of Exsize for desizing fabrics. Included is a review of general sizing and finishing and a flow chart showing the cotton and rayon finishing processes. Pabst Sales Company, 221 North LaSalle St., Chicago, Ill.

371. Aluminum in the Chemical Industry — Published by Aluminum Company of America. Fifty-two pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses. Aluminum Company of America, Pittsburgh, Pa.

372. Stewart Fences—Illustrated catalog which is a complete text on the subject of fence for industrial uses. Stewart Iron Works Company, Inc., Covington, Kentucky.

373. The Bowen Spinner's Record Book—Handy leather bound notebook which contains a world of useful information as well as tables for keeping accurate spinning data. U. S. Ring Traveler Company, Providence, R. I.

374. Fidelity Spooling Machines—Illustrated booklet describing the Fidelity Spooling Machine and outlining its many applications in the textile industry. Fidelity Machine Company, Philadelphia, Pa.

375. The Fidelity 3 Carrier Back Winder—Folders describing this new backwinder which is used to recover silk in press-offs from full fashioned three carrier leggers. Fidelity Machine Co., Philadelphia, Pennsylvania.

376. Leather Booklet No. 202—Attractive booklet illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Pickers, Harness Straps, Lug Straps, Bumper Straps, etc. Also describes BONDARON Special Tanned Solid Round Leather Belting, Flat Belting and Standard Oak Tanned variety of Leather Belting. Chas. Bond Co., Philadelphia, Pa.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., Jersey City, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

178. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washing. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full-Fashioned Division, Norristown, Pa.

COTTON, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the March 1940 issue of COTTON.

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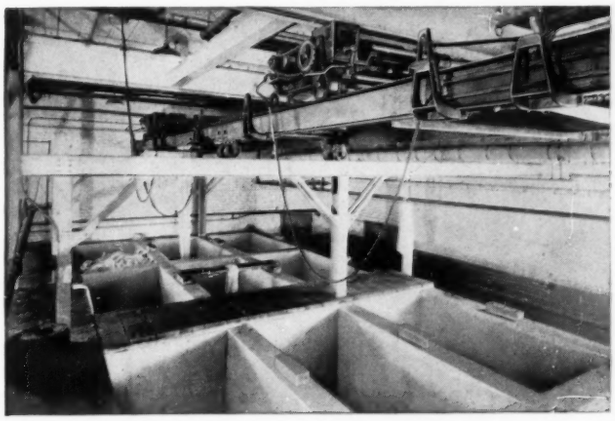
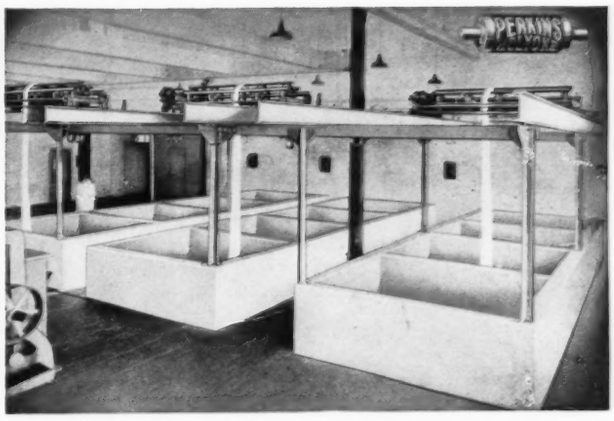
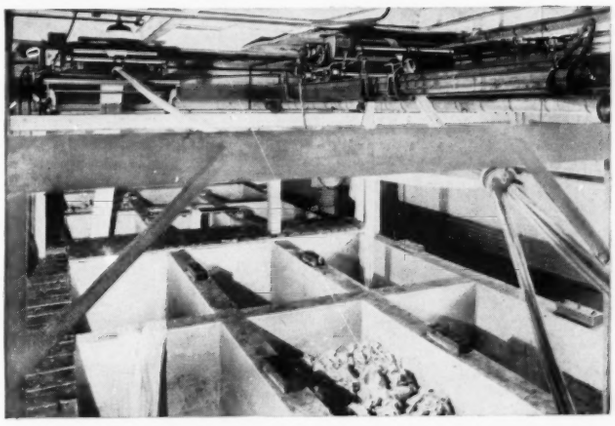
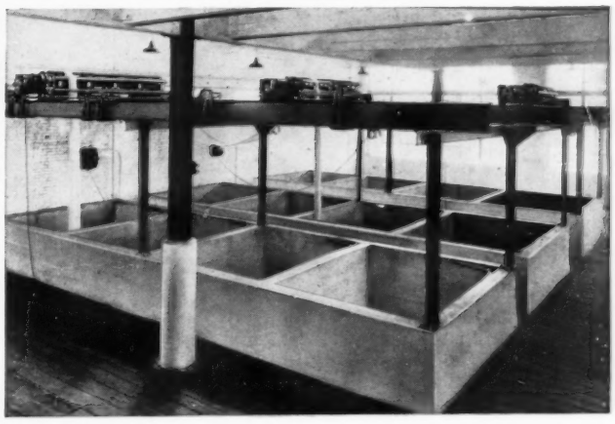
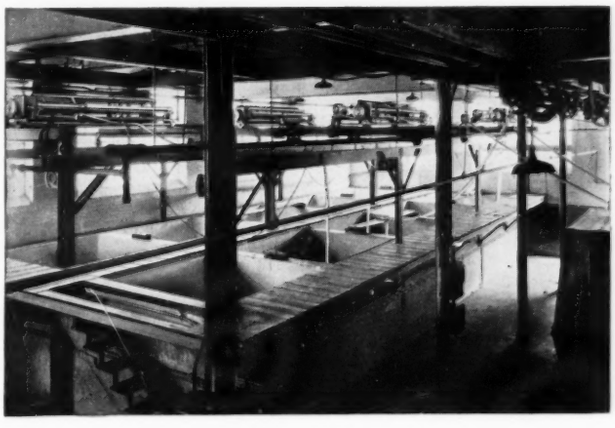
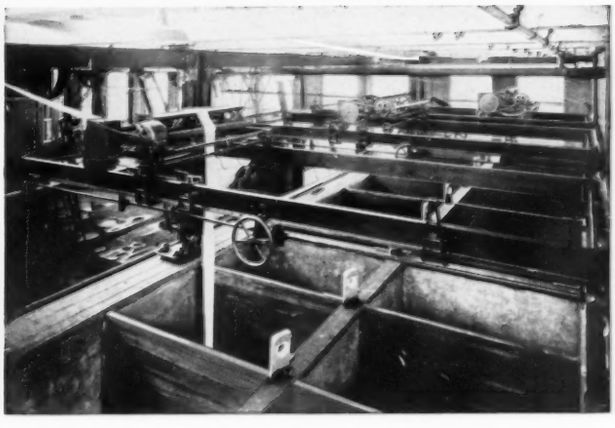



PERKINS BIN PILERS. These automatic machines eliminate hand labor and losses due to soilage, and snarling or knotting. They pay for themselves in less than two years.

Typical Perkins Bin Piler Installations:—

Appleton Company.
Apponaug Co.
Arkwright Corporation.
Arnold Print Works.
Aspinook Corp.
Bellman Brook Bleachery.
Boott Mills, Inc.
Cannon Mills Co.
Chicopee Manufacturing Corp.
Clearwater Manufacturing Co.
Columbia Mills, Inc.
Cranston Print Works Co.
Crystal Springs Bleachery.
Dan River Cotton Mills.
Danvers Bleachery.
Defiance Bleachery.
Delta Finishing Co., Inc.
Dodgeville Finishing Co.
Dutchess Bleachery, Inc.
East Lyme Bleachery.
Erwin Cotton Mills Co.
Fall River Bleachery.
Glenlyon Print Works.
Hampton Co.
Johnson & Johnson Inc.
Kerr Bl. & Fin. Wks., Inc.
Lewiston Bl. & Dye Works.
Lincoln Bl. & Dye Works.
Liondale Bl. & Pr. Wks.
Millville Mfg. Co.
Montreal Cottons, Ltd.
Mt. Hope Finishing Co.
Nashua Mfg. Co.
No. American Lace Co.
North Carolina Finishing Co.
Pacific Mills (Lawrence, Mass.)
Pacific Mills (Lyman, S. C.)
Pontiac Bleachery.
Providence Dy., Bl. & Cal. Co.
Proximity Mfg. Co.
Quaker Lace Company.
Queen Dyeing Co.
Rock Hill Print. & Fin. Co.
Rockland Finishing Co.
Rosemary Manufacturing Co.
Sayles Biltmore Bleacheries.
S. Slater & Sons, Inc.
Slatersville Finishing Co.
Standard Bleachery Co.
Sterilek Co., Inc.
Stevens Linen Works.
Thomaston Bleachery.
Union Bleachery.
United States Finishing Co.
Utica Willowvale Bleaching Co.
Waldrich Bleachery.
Western Shade Cloth Co.
Wilkes-Barre Lace Mfg. Co.

B. F. Perkins & Son, Inc., Holyoke, Mass.

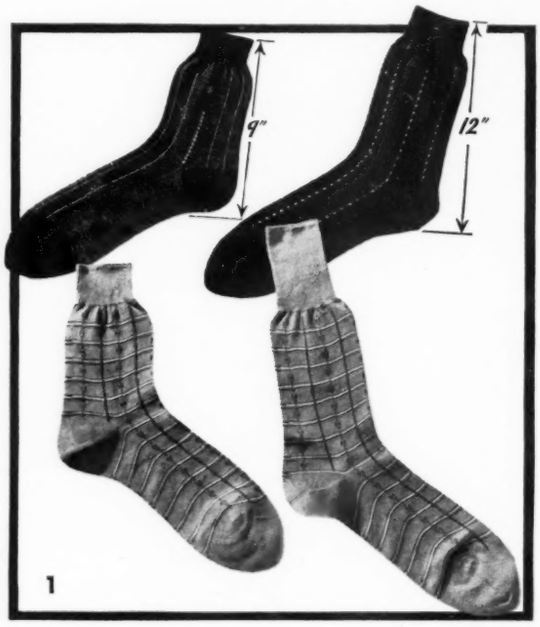
KNITTING CIRCULAR

Volume—Generally Speaking

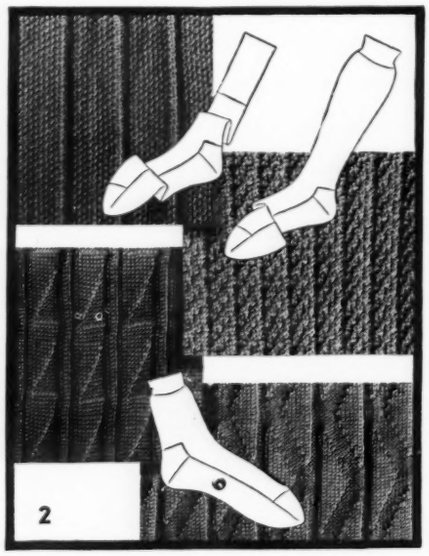
Buying agencies representing country-wide merchandising organizations have given our reporter the news of hosiery trends from coast to coast for this month's Knitting Circular. Shown here are samples of the type of volume merchandise that, generally speaking, is setting the sales pace in city, town and hamlet throughout the country.

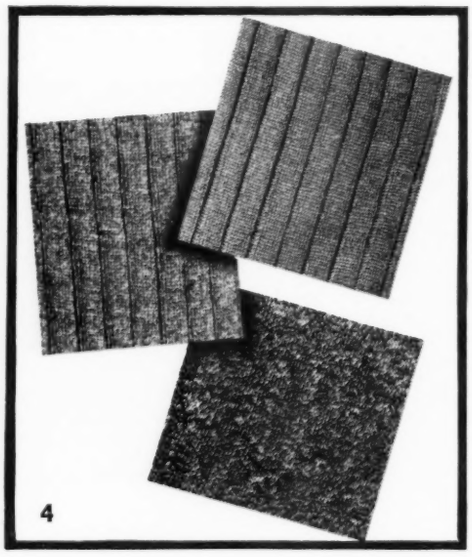
One of the most interesting bits of news of country-wide importance is the tremendously increased sales of slack socks and anklets—reflected in the new high in hosiery sales set during 1939. This trend is expected to continue, according to the majority of firms which we interviewed. An unusual development is the growing demand in many quarters for the 12″ sock for men.

Representative of what is selling in volume to men throughout the nation are the items shown at right in Group 1. First, at the top is a 35¢ black and white 9″ slack sock of twisted yarn with vertical wrap pattern and a color-in-color wrap clock. This is from Murphy, Brill & Sahner. Next to it is the Baker-Cammack new 12″ "High Slax" sock—gray with red and white and black panel wrap. The remaining two illustrate a new pattern in two different lengths (slack sock and the conventional half hose), with horizontal stripes and vertical wrap designs, in six attractively blended wrap colors. All of these can be made on the Scott & Williams HH-PW machine, which offers economical production of any length socks, any length of ribbed-elastic or non-elastic-tops, 24 colors, and color-in-color or color-beside-color wrap designs. Thus, short or long, 9″ or 12″ or regular half hose, whichever way the demand leans, you can cover the market with the right lengths and the right patterns too, if you are equipped with the HH-PW.



Komet Links-and-Links merchandise for men, women, and children continues to increase in popularity with new colors and designs appearing everywhere. First in Group 2 is a man's broad ribbed Links-and-Links—a new pattern. Next is a fast-selling knee-length Links-and-Links pattern for women. Also illustrated are two remarkably interesting patterns that go well wherever shown.

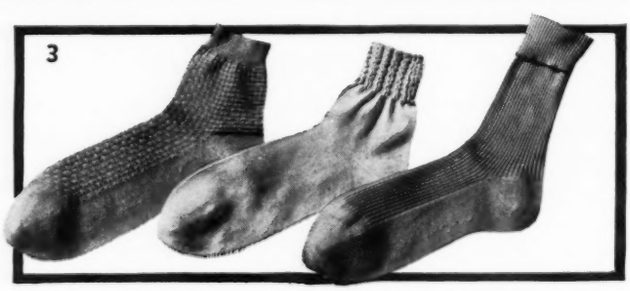




"Children's Hose", a large distributor, reports that the 50¢ fine gauge Komet Links-and-Links anklet shown first in Group 3, a plain anklet with cable top at 25¢, and the regular Komet 2x2 up-and-down anklet at 35¢, are country-wide sellers.

According to buyers and representatives for stores in all parts of the country, there is a large market for hose in the 10, 12½ and 15 cent price range. However, there is a feeling among many that they will be unable to keep on getting the same quality in lightweight work socks and low end hosiery because many manufacturers do not have the latest type of automatic machines to produce it economically. That it is possible to maintain quality in this price bracket is illustrated by the swatches in Group 4, all knit on the HH machine by Jordan Mills. Top swatch is of a green 15¢ sock of mercerized cotton with sinker drop stitch vertical wales. Next is a 12½¢ cotton heather, also with sinker drop stitch. The third is a 10¢ work sock of mixed color cotton with white heel and toe. To mills that find difficulty producing such popular items profitably, Scott & Williams suggests the HH 3¾″-176 Needle Machine, which does the job with great economy and efficiency.

Scott & Williams will be glad to give further information regarding the machines that produce the merchandise shown here.



SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

KNITTING SECTION

KEEPING UP-TO-DATE

By Frank Boyd

TO MIS-QUOTE an old saying, "There's always something new under the sun", and when this is applied to the manufacture of fancy hosiery it behooves all knitting mill men who must meet today's competition to keep well informed on what is new in their line and how to use this information advantageously. This is especially essential regarding mechanical equipment.

The machine manufacturers spend thousands of dollars annually on experimental work and building attachments to increase the pattern range and improve the quality of work produced on their machines.

The results of these experiments are available to anyone interested, merely for the asking and many of these attachments can be applied to older style machines, thereby enabling those mills that have old style machines to make more up-to-date patterns and better mermerchandise.

For example, a close friend of mine purchased twenty of the first Banner wrap, or R/V (reinforced vertical), machines that were put into operation in the Carolinas. These machines had only four selective steps and carried only eight bobbins of wrap yarn. Thus the pattern range on the machines as originally equipped was limited to widely spaced figures, verticals, or very simple clocks. The method of control for the wrap feed on the machines was not so good and only a very expensive kind of wrap yarn could be used with much success. However these were minor details at that time because the demand for that particular style of hosiery was so great the machines could be operated very profitably. But as increased numbers and much improved types of wrap machines were put into production throughout the country my friend found it more and more difficult to operate at a profit these machines which were fast becoming obsolete.

He had added some of the later type eight step R/V machines to his knitting department and found the wrap control finger on the new type machine a big improvement over the old type. So he got in touch with the agent for the Banner manufacturers and placed an order for new style wrap control attachments to equip his old style machines. At the same time he was informed as to how these machines could be equipped with the new forty color wrap heads and spindles at a cost that was very reasonable when considering the results that could be achieved, so he ordered this equipment also.

Some random examples of the work that machinery manufacturers are doing to assist mills in filling diversified orders.

In a recent conversation my friend told me that with the new forty color wrap spindle attachment he can make patterns using up to forty wrap yarns in grouped verticals, color-beside-color panels or figures. The change in the wrap control system also enables him to use almost any kind of yarn he desires for the patterning thus reduces his cost in this way.

The first wrap machine brought out by another manufacturer is the E. S. (embroidery stripe), machine carrying eighteen wrap bobbins with single selecting position. On this machine as originally built, when two different colors are wrapped simultaneously a space of several needles in width is required to allow time for the wrap fingers to move out to cover the selected needles and back without interference. This company now has an attachment that can be applied to the machine which increases the pattern range to a much more varied and wider extent. This is called the color-in-color attachment. With it there are two different selective positions with individual control and wrapping at both positions. An almost unlimited variety of color-in-color clocks, panels, and figures, color-beside-color verticals, ribs, etc., can be made on the machine when equipped with this attachment. The color-in-color attachment can also be applied to the thirty six bobbin machines.

Another attachment which has been developed is the Double Diagonal Spindle, and is designed to be applied to either the eight or nineteen step Hemphill machines. The unique method of shogging, or shifting of the wrap tubes, as made possible with this attachment, allows the coverage of needles at any position in the cylinder as selected, with as few as two wrap tubes. With the Double Diagonal Spindle patterns of large argyles, diamonds, broad figured panels spirals multi-colored clocks, etc., similar to the costly hand-made styles imported from foreign countries can be made.

There are many more attachments such as these that can be applied to all types of knitting machines which will do much to improve the quality and appearance of the goods produced, there-by placing them in a higher priced and faster selling class.

It would be wise for men connected with the hosiery industry to read their trade papers carefully in order to keep posted on new machine developments, and get in touch with the manufacturer for complete details.

SILK—Before It Reaches the Mill

By Caswell Clifton

SILK, you say, comes from a silkworm. So did we until we discovered that it comes from a silkmoth caterpillar, as no worm has legs and eyes, which is true in the case of the silkworm. Regardless, we will not argue the point. We simply want to chronicle a condensed article of facts about a product of which volumes have already been written. Silk comes from a silkworm—so be it.

About this caterpillar known as the silkworm: Silkworms are generally divided into three classes. Namely, the Chinese, European and Japanese varieties. Cross-breeding the worms of these varieties produces a much stronger worm and one that spins a better quality cocoon.

There are also three races of silkworms and these are determined by the number of hatchings per year. The Unvoltine silkworm hatches eggs but once a year—in the spring. The Duvoltine worm hatches twice a year—spring and fall. And the Polyvoltine variety hatches more than three times a year. The Unvoltine silkworms, or those hatching only once a year, produce the best quality of cocoons and artificial means are used to make them hatch twice a year. Due to this method of forced breeding, it is now possible to obtain a fairly-good quality of silk all year round.

Do you know that a silkworm goes through five stages of growth before spinning a cocoon? This period of development is termed the metamorphos—is of the moth which means, transformation of life from egg to moth. The process of conversion is as follows:

The eggs are hatched and produce grubs (baby worms) which are commonly called ants. These small ants are fed upon sliced, tender mulberry leaves and proceed to eat and lose their hair as they grow larger. The tiny ants consume three to four times their weight in food during the first 24 hours of life and a baby silkworm, or ant, grows very fast. In fact the worm develops so quickly that its skin cannot keep pace with the growth of the body. Therefore, when the skin becomes tightly stretched, the worm stops eating and goes into a period of resting which lasts until the tightened skin bursts. When this molting takes place, the old skin is cast off a new coat underneath and the worm now eats the cast-off coat and again begins to gorge itself with mulberry leaves. The worm goes through the molting process four times and then it is a fully grown and matured caterpillar and its skin has become white and transparent. Excepting some have a black stripe on each segment and these are called Zebra. The silk duct is also now fully developed and the caterpillar is ready to spin a cocoon. Accordingly, it loses its ravenous appetite and becomes very lazy and sluggish, and looks about for a place to spin.

Remember, the life range of a caterpillar, from the ant stage to the spinning stage, is from 20 to 30 days—according to the variety of worm and the conditions under which it was raised.

The caterpillar is now placed upon a small bush or a mat of folded straw and begins to spin its cocoon. This takes about three days of continuous spinning. When the cocoon is finally completed, the caterpillar lies without moving in its cozy nest, and gradually transforms into a chrysalis. And in about two weeks time the chrysalis has transformed into a pretty moth. The moth, in order to free itself, proceeds to hack through the wall of the cocoon with its sharp jaws. Once free, it lays its eggs and dies within a few days time.

With the laying of the eggs comes the hatching of the ants or baby worms and thus—*the process goes 'round and 'round.*

Vital Statistics

Silk cannot be reeled off a cocoon after the moth has freed itself because the wall of the cocoon and the silk fiber are cut during the freeing process. Therefore, directly after the spinning, cocoons are divided into two separate groups: One to be used for breeding purposes and the other for commercial use. The cocoons that are to be used commercially are placed in ovens and dried with hot air. This kills the chrysalis and prevents them from forming into the moths which break through the wall of the cocoon.

Yellow silk comes from silkworms having yellow legs. White silk comes from worms having white legs.

Silkworms are raised almost entirely by the farmers of Japan in their own homes. It requires much care and skill to feed the baby worms and they are so gentle that girls and women are usually employed in their handling. Silkworms do not bite or sting. They are fed five to six times a day and two to three times at night when they are young. Baby worms are fed upon finely-sliced mulberry leaves and silkworms never drink water but cannot be fed with dry leaves.

Silkworms grow in size from ¼-inch to 3½-inches in length. A silkworm increases its weight by about 5,000 times and never leaves the tray upon which it is fed. When it is ready to spin, the silkworm turns over on its back in the shape of a horseshoe and with legs protruding outward, emits the silk filament from tubes, using a rapid circular

motion of the head and spinning the silk around its body. During this spinning process the head of the silkworm makes one complete circle per second and over a quarter million circles are required to make a cocoon.

A cocoon is made up of one continuous filament of silk which measures up to a quarter mile in length. This filament varies greatly in thickness and is much too fine to be reeled off the cocoon as a single strand. Therefore, several filaments of several cocoons are joined together and reeled off at the same time.

The unit of measurement used to determine the thickness or size of silk is termed "denier". Silk filaments vary in thickness from two to four and one-half denier. As it is very hard to reel even threads of silk by combining such uneven filaments, the uniformness of silk depends a good deal upon the skillfulness of the reeling girls.

There are two types of reeling: The direct and the re-reeling methods. The Japanese, or re-reeling method is the most popular. In the re-reeling method, the silk is first reeled onto a small frame and then re-reeled onto a standard size frame.

The reeling girl takes the ends of five filaments of five different cocoons and twists them together. She then draws this combination of five ends through a fine hole located on the reeling frame. As the filaments pass through this "eye", as it is called, they twist themselves into one compact thread.

Reeling girls must watch the cocoons very closely in order to keep the same number of filaments in each thread and when the filament of one cocoon runs out, she must attach another filament as quickly as possible in order to reel even silk. The reeling girl holds many filament ends in her left hand and one end always in the fingers of her right hand and must be prepared to attach ends at any time. She must also be careful to hold a good assortment of different size filaments so as to be able to match any torn off ends.

(Note: This is merely a general description of how silk is reeled from the cocoons as it would be very hard to explain the operation fully without the aid of diagrams. The larger operators maintain schools where girls are trained for reeling.)

Silk skeins are formed by hanging one end of the reeled silk over a hook. It is then twisted one way and folded in two, then twisted another way and is then inserted into the end on the hook to finish it off. When the skeins of silk are finished, they are laced to prevent the thread from tangling.

The skeins are then placed on a pile, six skeins across and five skeins high. This pile of thirty skeins is called a "book". Books are graded by inspectors, according to luster, feeling, etc., then a chop ticket is inserted. The books are packed into cases and are ready for shipment.

Do You Know that:

Japanese cocoons are peanut-shaped. European and Chinese cocoons are round.

A couple of million, or about one third of the farmers of Japan are engaged in silk-raising.

The silk-reeling industry of Japan employs upwards to half a million people and out of this number, more than three-quarters are women.

The United States is the world's largest consumer of raw silk but not one pound is produced here.

Penna. Hosiery Advisory Committee Named

The appointment of an expanded hosiery advisory committee to the Pennsylvania Department of Commerce has been announced by State Secretary of Commerce, Richard P. Brown. The committee is composed of manufacturers, hosiery workers and state officials. It will work for the development of the hosiery industry within Pennsylvania. Mr. Brown is chairman of the committee. Other members of the advisory group are Luther D. Adams, American Federation of Hosiery Workers; Charles Chipman, Rosedale Knitting Co.; Lewis G. Hines, Secretary of Labor and Industry; J. Lloyd Keller, Chalfont Hosiery Mills; Joseph P. Kline, American Federation of Hosiery Workers; Joseph Largman, Largman-Gray Co.; William M. Leader, American Federation of Hosiery Workers; Charles Lehmuth, Full-Fashioned Hosiery Manufacturers of America; Dr. J. E. Livingood, Berkshire Knitting Mills; Alexander McKeown, American Federation of Hosiery Workers; Paul Pleet, Franklin Hosiery Mills; K. R. Seelaus, Concordia Silk Hosiery Co.; A. L. Spiro, Gotham Silk Hosiery Co.; James Underwood, Sterling Silk Glove Co.; John H. Vogt, Nolde & Horst Co., and Dr. George W. Taylor, University of Pennsylvania.

Herrick President of Scott & Williams

Robert F. Herrick, Sr., Boston, Mass., for many years chairman of the board of directors of Scott & Williams, Inc., Laconia, N. H., is now also president of the company, succeeding the late Walter L. Toy. Beale J. Faucette continues as vice-president in charge of sales, making his headquarters at 40 Worth St., New York City. Harry J. Kelly, treasurer and member of the board, has been named as resident manager at the Laconia plant. Albert Page, vice-president in charge of developments and patents will be located, as at present, in Laconia.

Hosiery Imports from China Higher

Imports of hosiery from China reached large proportions for the first time in 1939 with a total of 307,000 dozens coming in compared with 22,000 dozens in the previous year. The National Association of Hosiery Manufacturers in a report covering last December showed that imports from China for that month alone amounted to 112,000 dozens. From Japan, heretofore the big source of cheap hosiery imported by this country, the total last year was 695,000 dozen compared with 601,000 dozens in 1938. The Association points out that the disturbing feature in the imports of cotton hosiery from Asia is their exceedingly low values. The declared value of Japanese cotton hosiery averaged 29 cents per dozen pairs while that of hosiery coming from China averaged 18 cents per dozen pairs. Total hosiery imports for 1939 were 1,349,000 dozens valued at $1,194,000.00 compared with 972,000 dozens in 1938 with a value of $1,131,000.00.

KNITTING KINKS

Operating and Fixing Model ES Machines

Article 11

By Emmett Starr

• This is the eleventh article in a series* concerning the care, operation, and fixing of the Model ES machine. The series is written with the assumption that the reader has before him the S & W catalog of parts pertaining to the machine. Should you wish any particular phase of fixing discussed, the author will be glad to do so upon request through the editors . . . . . .

THE PATTERN mechanism consists of the cylinder pattern jacks, cylinder or intermediate jacks (which are used between the pattern jacks and the needles) selector fingers, selector drum and selector drum jacks.

Under each needle, upon which it is desired to wrap the patterning yarn, a cylinder pattern jack and cylinder jack is placed. The cylinder pattern jacks have twenty butts, being placed in the lowest twenty positions, starting from "G" butt down to "Z" butt. The "G" butt is used for removing the pattern just before the heel and making the plain sole. The "Z" butt is used to block out certain parts of the pattern where desired, as for instance, to keep the clock jacks out of action from the transfer to the usual starting point of the clock and also at the finish of the clock in the foot, yet permitting the other pattern jacks that have no "Z" butts—that are used for vertical stripes or other patterns—to take on the wrap yarns. There are therefore eighteen butts upon which selected patterns may be produced.

Care should be taken in breaking off butts from the pattern jacks. The whole butt should be broken off and not just part of the butt, as the remaining part of the butt may come in contact with the finger selectors causing the jacks to be depressed at the wrong time; they should be selected to raise needles to take on the wrap yarns. Inspect the cylinder pattern jacks after the butts have been broken off; if too badly burred they should be polished in order that the jacks can be pushed out, depressed, raised and lowered smoothly. This will greatly reduce the wearing of the cylinder walls, cams and the pattern jacks.

Before inserting the cylinder pattern jacks, they should be bowed so that there will be a certain amount of tension on them to keep them in place. Jacks that are extremely bent or bowed have too much tension. It is better to bend the jack slightly at the upper and lower part to form an "S" than to have one extreme bend; this gives the jacks a more uniform tension with less friction which means easier operation of the jacks with less wear on the various cams.

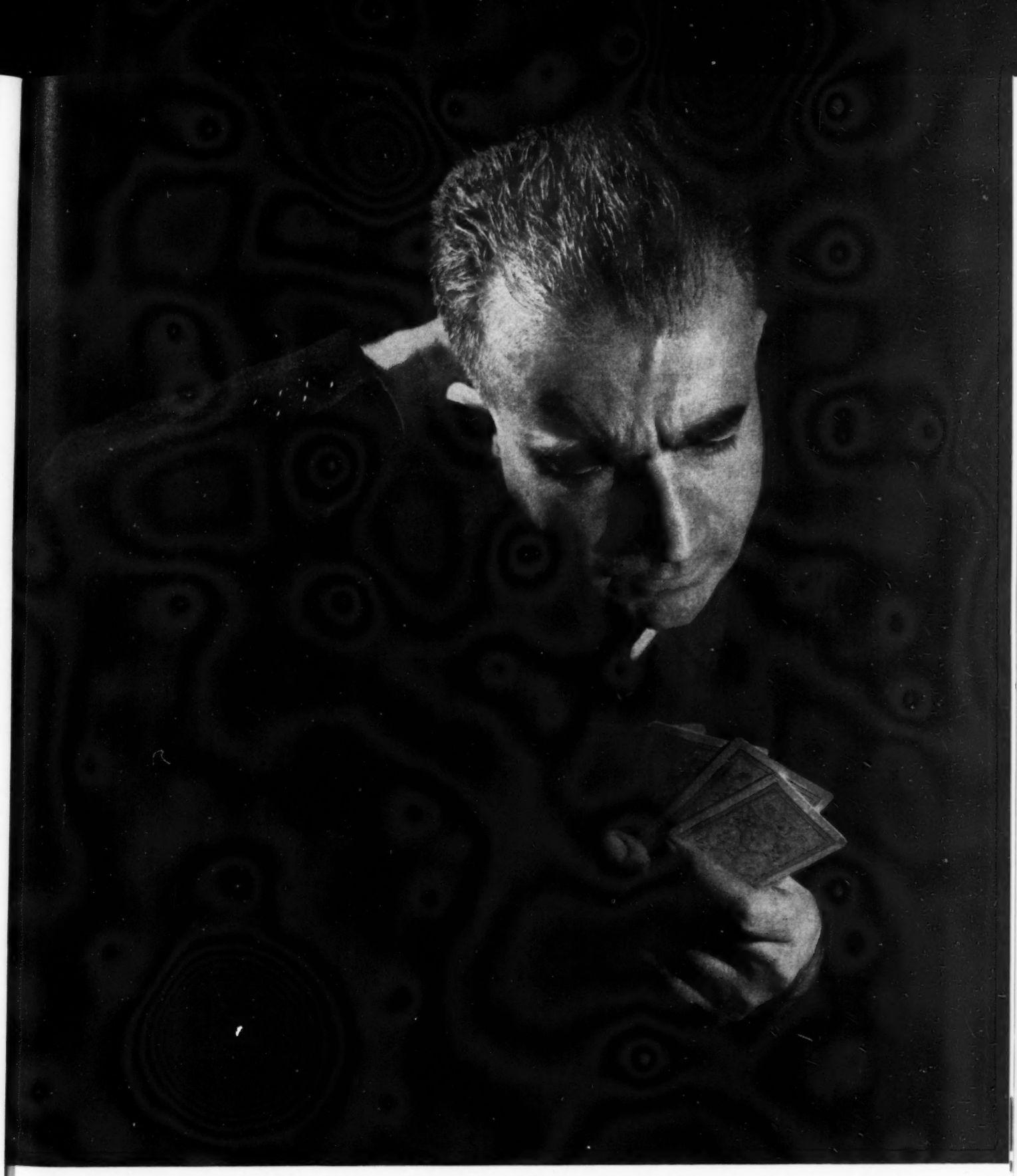
There are twenty selector fingers, one for each butt of the cylinder pattern jacks. The topmost of the twenty fingers (which is the plain sole selector finger) when in action depresses all the pattern jacks with the "G" butt. The "G" butt jacks are under the needles of the heel side in order to take the pattern out before changing to the heel and also after the heel so as to make a plain sole.

Another reason for depressing the cylinder pattern jacks under the needles of the heel side before the rack that changes the clutch going into the heel is that no needles should be raised as the right raising cam and the right draw down cam are being withdrawn from action. Any medium or long butt needles (these are the heel side needles) that are raised due to the "G" butt being broken off or failure of the plain sole selector to depress these pattern jacks, and not raised to their full height or drawn down part way as the right raising cam and right draw down cam are being withdrawn from action, will leave those needles in such position that the butts of the needles will strike the center cam or the guard cam (7949) located on the right hand lifter post, breaking off the butts and may cause a serious smash-up. Perhaps some needles will be raised to their proper height and not drawn down. Such needle or needles will remain in an inactive position during the heel or part of the heel and will cause the yarn to load-up on the needle or needles as if the butts were broken off.

The plain sole selector finger is not controlled by the selector drum, but is controlled by the top selector control lever (200457) Plate 13 which is connected to the drum lever (200355) Plate 15 and is governed by the cams on the main drum. The finger is either in action continously or not in action at all.

The finger drops in action on the auxiliary move just before the rack that changes the clutch going into the heel, depresses all the pattern jacks with the "G" butt, taking the pattern out for one course before the heel. By letting the drum lever drop off the cam on the preliminary rack just before the auxiliary rack the pattern will be taken out four courses before the heel. On some patterns it is advisable to block out the pattern at the start of the high splice; in that event it will be necessary that the drum lever drops off the cam on the rack that inserts the high splicing yarn.

*The other articles in this series appeared in the Knitting Section of the August, November, and December 1938 issues; the January, March, July, August, November, and December 1939 issues, and the January 1940 issue. More will follow.



"When in doubt, win the trick"
HOYLE

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

TEXTILE MACHINE WORKS • READING, PA.

The lowest of the twenty selector fingers is the "Z" butt or make-up finger (14081) Plate 14, being controlled directly from cams on the side of the main drum and has a special use as mentioned in the first part of this article.

The make-up finger is connected by a series of levers to the lower jack shaft (10877) Plate 8 and has a lever action and is not held in action by any springs. The jack shaft operating lever (4262) Plate 8 resting on the drum cam puts the finger in action depressing all cylinder pattern jacks that have the "Z" butt on. There is no spring holding the finger in action, but there is a spring to pull the finger out of action as the lever drops off the cam. The make-up finger when in action should not press too hard on the butts as it is likely to cause the butts of the jacks to become bent or broken. Jacks with bent or broken "Z" butts when pushed out will not be depressed in order to block the pattern; instead they will remain out to ride over the jack cam, causing the needles that are over these jacks to be raised by the right raising cam, taking on the wrap yarn when they are not supposed to. Too close adjustment may also have a tendency to spring or snap the jacks out after passing the make-up finger.

The remaining eighteen selector fingers are controlled by the selector drum. When any of the eighteen selector fingers are resting on the butts of the selector drum jacks (200081) Plate 16, the cylinder pattern jacks with the corresponding butts will not be depressed. These cylinder jacks will be raised by the jack cam elevating the needles in order that they can be raised by the right raising cam to take on the wrap yarn. Selector fingers not resting on the butts of the selector drum jacks will depress the cylinder pattern jacks with the corresponding butts. The selector fingers from "G" to "Y" are held in action by selector finger springs. The springs should be strong enough so that when any selector fingers are in action they will depress the cylinder pattern jacks, providing the jacks are not too extremely bowed, putting too much tension on them so that it will require two springs to push them back.

Mistakes can easily be made in cutting out a set of cylinder pattern jacks and selector drum jacks. Be careful when setting up a pattern. Examine thoroughly the first sock or piece of fabric oft the machine to see whether the pattern is right; if not, check the cylinder and selector jacks to make sure the proper butts are on and also that the selector springs are not broken or unfastened before making any change or adjustments af any kind.

There are also two color selector fingers (200-877A & B) Plate 14 which aare controlled by the small upper jacks in the selector drum. These fingers do not contact the cylinder pattern jacks, but are used to operate the selector cam which operates the colored yarn fingers and thus provide the changes of yarn in conjunction with certain features of the pattern, for instance, the head of the clock might be of a different color than the stem or the head may have two different colors and the same two colors may be used in the stem: a design of a third color might be inserted in the stem and it could be inserted in the head if so desired.

The lower color selector finger governs the right hand outside selector arm and the upper finger governs the inside selector arm. The out-levers are fastened to the selector lever shaft and the inner levers to the selector lever sleeve.

Color selector fingers that do not work free will cause the colored wrap yarn to be inserted at the wrong time. Check the selector lever links and the controlling lever links as it may be necessary to rebend these links in order that the fingers will work freely. Before making any changes on the lever links it would be advisable to check over the various springs, making sure that none of them are broken or have become unfastened.

When replacing the selector finger shaft, place the lower end of shaft over lower pivot (19875) Plate 15; the upper end of shaft should be under the upper pivot screw (11369) Plate 17. Turn pivot screw down until the shaft is forced down on the lower pivot, making sure that the pivots are in the center of shaft when shaft is held firmly in place tighten pivot screw nut (15955) Plate 17. Failure to tighten nut will allow the pivot screw to work upward; the shaft not held firmly in place will change the action of the pattern push-out cam and the various selector fingers.

Streaks in Full-Fashioned

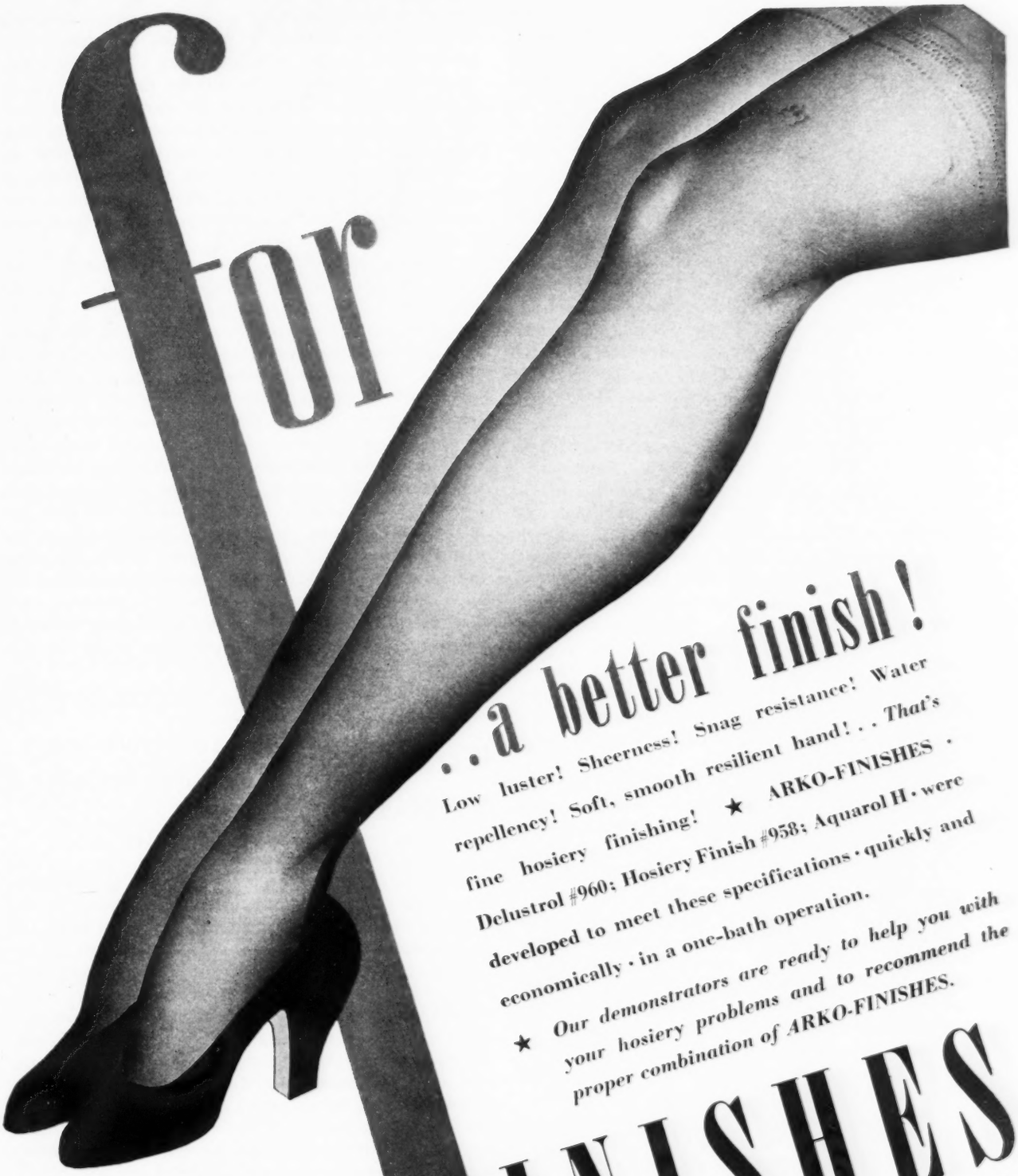
EDITOR COTTON:

The following hints may be of some assistance to "CONTRIBUTOR NO. 6953", who has asked on page 177 of the October issue of COTTON the causes and remedies of streaks in full-fasioned hosiery.

Streaks in full-fashioned hosiery may be caused by mechanical maladjustments in manufacturing and by external incidents as well. In dyeing hosiery overcrowding of the dye nets (into which the hosiery is placed preparatory to dyeing) may result in poor and uneven penetration of the dye liquor. This will invariably produce uneven dyeing and the hosiery will appear streaky. If a dye batch of hosiery is overworked in the dye kettles, friction streaks will develop and they will give the hosiery a streaky appearance. Such streaks are more conspicuous in the darker shades of hosiery colors.

Streaks or vertical lines may be caused by sinker or needle lines. There are several causes for lines due to needles. A broken needle, often unnoticed by the knitter, will leave a ridged line right down the stocking. If the needles are not in perfect alignment, lines will show up in the hosiery. Such lines are not always apparent in the grey, though a trained eye can discern them. All needles should be carefully pliered and time should be taken by the knitter to see that not only the new needles placed in the needle bar are in alignment, but that the old needles already in the bar are not out of alignment.

Another cause for needle lines is using the wrong gauge needle. Using heavy or a coarse gauge needle on a fine gauge machine (or vice versa) will



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produce lines. Care should be taken by the knitter to see that he is using the proper gauge needles. Needle lines can also be caused by using short needles on a long needle machine, or using a long needle on a short needle machine. Such an error is often the result of hurry on the part of the knitter to put in his needle and start up without losing too much production. He grabs the wrong needle and inserts it in the bar without a thought to what he is doing. This is an isolated incident, but the writer saw it happen on one occasion.

Sinker lines will give hosiery a streaky appearance. This may be due to the slots in the sinker heads being worn too large and this will give the sinkers too much play. There is an adjustment screw that can be tightened to reduce this play, but if the slot is too far worn, it will then be necessary to dismantle the sinker head and file it down until it fits tightly.

After a machine has been run for a length of time, all the parts become somewhat worn. Replacing a worn part with a new part is likely to disrupt the mechanical synchronization of the machine. Replacing a worn striking jack with a new jack will sometimes do this because the new striking jack will be slightly longer at the end than the old one; this will push the sinker farther out, making a larger and looser stitch than the old one. This loose stitch occurring every course will show up in the knitted stocking as a line or streak. It is advisable for the fixer or mill superintendent to have on hand some old and worn jacks, to serve as replacements when the jacks in use have to be removed because of a smash or for some other reason.

When machines have been consistently running for a few years, the butt end of the sinkers become worn and this will cause sinker lines. When this occurs it is time to have the machine re-sinkered. Too much play in the sinker head will cause the sinkers to fly back and results in sinker lines.

Too much pressure on the catch bar can cause sinker lines. In an instance such as this, the pressure can be eased up by mechanical adjustment. *Oil* does not cause streaks. Unless a heavy, insoluble oil is used and remains in the hosiery in spite of boiling-out and dyeing. This will show up in the dyed hosiery as oil streaks and lines.

If there is an insufficient amount of grease on the striking jacks (of the older type knitting machines) they may, as a result, fly back and this will cause the sinkers to rebound. The newer type machines are equipped with jack spring bars. These bars hold the sinkers forward. To prevent "rebounding of sinkers" trouble, the heads of the striking jacks should be greased so that they will stick to the butt ends of the sinkers and hold them forward. Special grease should be used for this purpose, as ordinary grease will harden.

All silk other than boiled-off silk (and ingrain silk) contains silk gum. As the hosiery is being knit, a certain amount of degumming of the silk takes place—some of this gum adhering to the needles. As long as the machine is running and the silk is kept in transit, there is sufficient lubrication to keep this gum from hardening. But when the machine is stopped for any length of time, the gum has an opportunity to harden on the needles. This will either roughen or "fuzz-up" the silk or may even cut it. When a machine is stopped for any length of time, the needles should be oiled to prevent this gum from hardening and also to prevent rusting. It is also advisable to oil the needles when changing shifts, or when closing down. This oil should be applied with a soft brush. Needles should be oiled at least once a day.

Sinkers, dividers, and jacks are lubricated in ratio to the speed of the machine, and the use of the equipment. The faster the machine operates and the longer it is run, the more often it should be lubricated. Hosiery machines are lubricated on schedules, the same as an automobile—the more mileage and service it is put through, the sooner it gets a "grease job". Sinkers, dividers, and jacks should be lubricated with a light machine oil at least once a week. However, if the machine runs 2 or 3 shifts it is advisable to increase this schedule. Proper lubrication will prevent "lazy sinkers"—a lazy sinker holds onto the stitch and delays the proper functioning of the equipment, and may cause imperfect fabric. In most mills operating 2 shifts, the sinkers and dividers are oiled once a day for safety's sake. One machine company has prepared a complete lubricating schedule which could be used as a dependable guide for this purpose.

CONTRIBUTOR NO. 6992

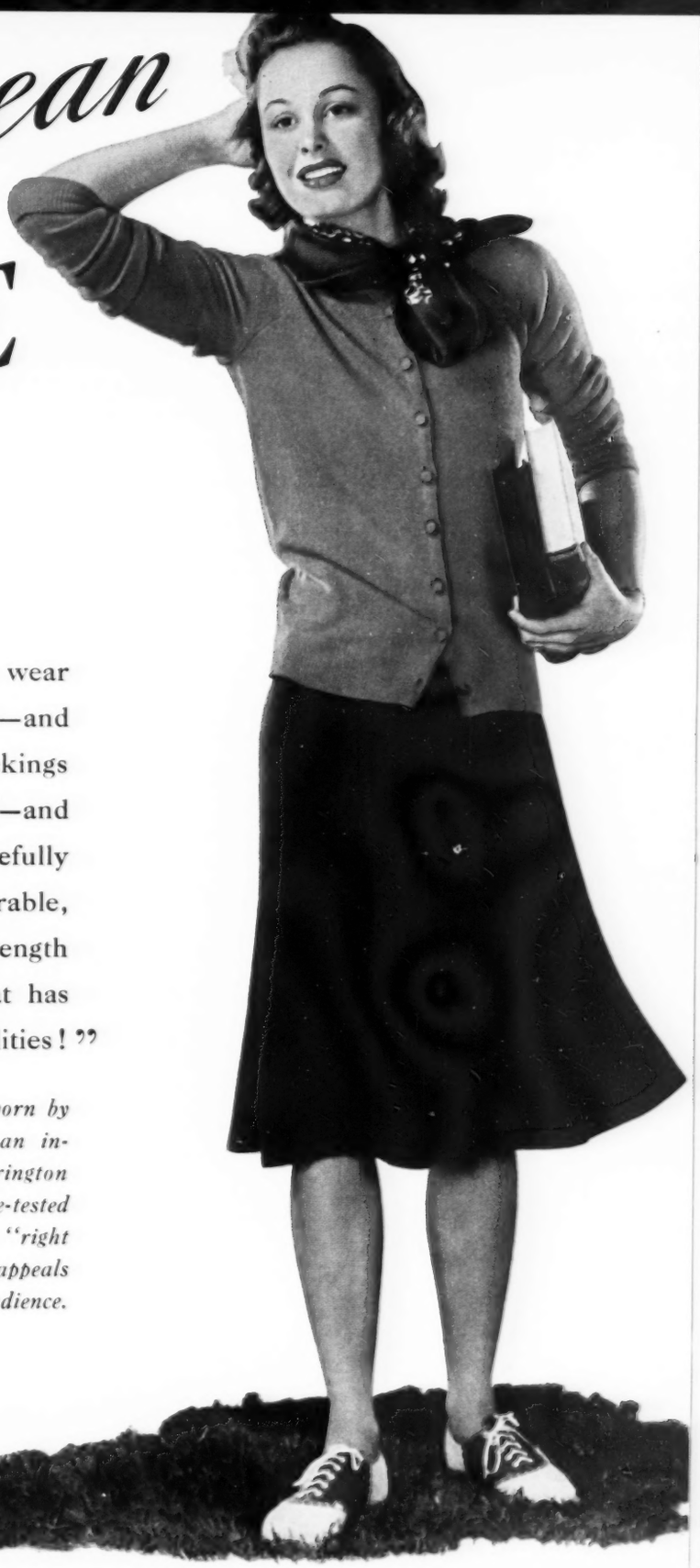
The Sizing of Full-Fashioned

EDITOR COTTON:

"CONTRIBUTOR NO. 6952" would like to know the best method of sizing full-fashioned stockings in the knitting room, according to his question on page 121 of the September 1939 issue of COTTON. Well, let me state right here that this is a tough assignment, as a dozen mill men could probably offer as many "best" solutions to this age-old problem of sizing. However, there is a system of sizing now being successfully employed by one of the largest hosiery mills in the trade, and it is this system that I will endeavor to explain in the following paragraphs . . . let the short stockings fall where they may.

First, before going into the matter of counting courses on the stockings when knitted, we will briefly discuss the silk that goes into the making of said stockings. For without uniformity of raw material the counting of courses becomes just so much wasted effort. Suppose, for example, a manufacturer orders 50 bales of white Japan silk to be used in the making of a three-thread stocking. Now we all know that white Japan silk may have as low as 16 per cent or as high as 23 per cent gum content . . . it all depends upon the origin of the silk. If the fifty bales of silk thus ordered were mixed at the filiature . . . that is, silks of different origin mixed into the same lot . . . the manufacturer upon using said silk would get a

They mean a lot to ME



"Paris hasn't much to say about what we wear on the campus. We make our own styles—and wear our clothes the way we like. Silk stockings are part of every college girl's wardrobe. I—and most of the girls I know—select them carefully for looks and for wear. Sheerness is desirable, of course, but not at the expense of strength and durability. I stick to the kind that has just the right combination of those qualities!"

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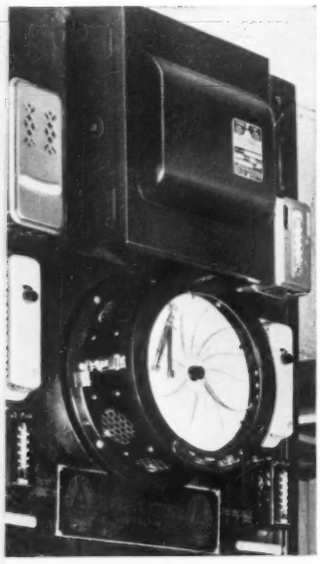

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seven per cent variation in his finished stockings because the silk had varied that much in the boil-off. As this means that two stockings knitted exactly the same length might finish a couple of inches different, it is easy to see that great care should be taken in the selection of a raw silk source of supply.

Second, comes the matter of throwing, or processing the raw silk, for here again there must be uniformity. Let us suppose then, that the fifty bales of aforementioned silk were up to standard and thus shipped to the silk throwster. Maybe, due to faulty throwing equipment or careless throwing, a couple of bales of silk is spoiled. As all waste in throwing is a total loss, the throwster may decide to make up this loss of weight by loading the lot of silk with soap and oil. This would also bring about a big variation in boil-off on the finished stockings, even though they had been knitted uniformly. There must also be uniformity in soaking, winding, twisting, conditioning and all other handling of silk if the finished goods would be average in uniformity. So before attempting to get average results out of knitting equipment, make certain that the silk is being properly processed by a reliable throwster.

Third, we come to the knitting, and this includes the counting of courses on the knitted stockings, or keeping uneven lengths at a minimum. And the way to do this is NOT by measuring sets of legs with a yardstick. For stockings knitted on a damp day will be long and narrow, while stockings knitted on a dry day will be wide and short. This variation is brought about by the effect of different degrees of humidity upon the silk.

Also, the counting of courses on stockings after they have left the knitting machine will not be a true course-count. For, during the process of knitting, stockings become stretched out of proportion and therefore the stitches distorted by uneven take-off, stretching of stockings by the knitter on the machine, etc.

Therefore, the only way to get an accurate course count on the legger is by counting the courses when they are knitted on the machine. To do this, simply start at the beginning of the boot of the stocking, run the machine and count a desired number of courses per inch, then stop the machine. Take a steel rule and measure from the beginning of the boot to the back of the needles. If the distance measures one inch the course count is accurate; if all of the stockings on the machine are short, or long, make the necessary adjustment at the slacker, blacken the silk and again run the desired amount of courses and then measure from the black mark on the stocking back to the needles If individual heads are off-size, adjustment must be made to the slurcock, or perhaps the sinker head or needle bar And always count courses on the legs at the start of the boot portion of the leg on the machine, for it is at this point that a full needle head is employed which makes for a minimum of strain and stretch upon the stitches

Counting courses on the footer is a somewhat different problem from that of counting courses on the legging machine. The reason for this is obvious: The course count of the foot of the stocking must match the course count of the leg at the instep, and as the course count of the leg at the instep varies from two to six courses finer than at the beginning of the boot, the foot course count must necessarily be finer. The condition of finer course count on the leg at the instep is brought about by slower motion of the legging machine during the knitting of the high splicing; also by the lessened take-off weight being centered on the heavier reinforced high splicing which leaves very little pull or stretch on the stitches between the high splicing. Therefore, a course count of the leg at the instep must be made in order to determine how many courses per inch to run the footer. This leg course count at the instep can be determined with a meter after the legs have come off the legging machine, and then the footer course count set accordingly (to match).

Variation in stitch between the leg and the foot at the instep can often be noted with the naked eye, and in the mill that I have reference to, the footer operator is trained to be on the lookout for any such variation which he reports to the foreman immediately. This eliminates the possibility of any great amount of mismatching at the instep, as the footer is held responsible for this type of bad work.

In conclusion, let me add that some of the most important factors in length control are, namely: Humidity control in the knitting room; uniform processing and conditioning of silk; checking of the course count each day on every machine by one trained to do this work; checking of individual heads at least once a week will also go a long way toward keeping length discrepancies at a minimum. And do not overlook the fact that machine operators can be taught the importance of keeping their stockings running uniformly, for an alert and responsible operator can save the finishing room many a headache.

CONTRIBUTOR NO. 6996

MAKE YOUR PLANS

to attend the 36th annual Knitting Arts Exhibition at the Commercial Museum, Philadelphia, Pa., April 15-18. Advance reports indicate that this will be another of those excellent knitting shows that you and your men have found so profitable in years past. You have read about new improvements in "Cotton" and at Philadelphia you can see them firsthand. Contacts at the show are always helpful; knitting men with common problems have the opportunity to discuss them. The exhibition will be well worth your time. We'll see you there.—The Editors.

As I See It

One of the most unfortunate mistakes that a supervisor can make is to take a jealously antagonistic attitude toward ideas and suggestions simply because somebody else thought of them first.

As has been so well said, "The man who shuts his mind to the ideas of others invariably shuts out much more than he shuts in."

Therefore, let me suggest that you judge an idea for its real worth, regardless of the source from which it comes.

You will be blamed less for not thinking of an idea yourself than you will be for rejecting the idea merely because you did not originate it.—*Glenn Gardiner in "Management Information".*

Single or Multiple-Job Finishing Operations

EDITOR COTTON:

"CONTRIBUTOR NO. 6937" in his question on page 121 of the September issue of COTTON has asked whether it is better to have the single-job (where operative only does one specific job) or the multiple-job (where the operative does ticketing, banding, tnd all the jobs) operations in the finishing department.

We consider the single-job operation to be far better in several different respects. In the first place, when you have an operator doing one job, they become much more proficient in doing that one job than they would if they were doing two or three different types of work. Of course, these different operations are all based upon a piece-work rate of pay. We have found that the operators much prefer to do the single-job operation, which they are required to do to maintain their part of the unit as a whole.

In the multiple-job operation it seems to me that you would have to have an awfully large amount of space for each operator to do transferring, ticketing, banding, etc. When you use the single-job method the girl who is doing the transferring has nothing on her work table but her transfers, transferring iron, and her work. If she used the multiple-job operation she would have to have at her finger tips the transferring iron, her transfers, also her tickets, bands, and labels. This would have to be the same with each operator which would be rather inconvenient for each of them.

Another thing that enters into the picture is the fact that some girls make better operators at the different jogs than others do, and it is the job of the finishing foreman to find out which of the jobs the different operators do more efficiently.

As stated before, we much prefer the single-job operation. This allows our work to move steadily through the finishing department with each operator doing the type of work that she is most proficient in doing.

However, we do have a few girls in our finishing room whom we use as utility operatives. These girls ordinarily do the labeling and boxing which is not on a piece-work rate of pay, and as they are proficient in most any operation in the finishing room, we use them from time to time on different operations whereever the work seems to get behind. We find that by having these few utility operators we can use them to help out in most of the different operations and keep the work steadily going to the shipping cases, and being sent to the customer with the least amount of time lost.

We do not have any rest periods in any of our operations. In using the single-job operation we find that the operators have ample time to take care of their operation and at the same time take a reasonable amount of rest throughout the different working periods. As they are paid on the piece-work rate, we have found that they will not take more time than is necessary.

This contributor also asked which method of operation brings about happier relations with the workers. Again we cast our vote for the single-job operation, as each operator knows that a certain operation of work is hers to do. If this operation catches up during the day, she does not expect to be given more work from another operation. Therefore, it eliminates any chance of dissatisfaction among the different operatives. It also eliminates any chance for them to feel that they are being discriminated against when they have to lose part of a day's work. Naturally that makes for better relations among the employees which means better relations between the employees and the employer.

CONTRIBUTOR NO. 6978

Crooked Seam in Welt

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 6956" would like information on how he can prevent having crooked or zigzag seams down the back of the welt on some of the stockings he is making. His question was on page 121 of the September 1939 issue of COTTON.

I have found from experience that crooked seams whether they are in the welt or in the leg are generally the fault of uneven sides or in other words, one side of the stocking is running longer than the other side in the legging operation.

When a stocking is manufactured this way the seamer must pull the short side or bunch the long side so that the seam will match certain points, such as at the welt, leg narrowings and high splicing.

As the contributor states that these crooked seams are only in some of the stockings I believe that this is what he should investigate to try to solve his problem.

I would suggest to him that the first thing to do is to watch all the legging machines when the welt is being knitted and see if each welt from each head is running even on both sides of the welt. If any unevenness does exist he can be assured that this is one of the causes for his trouble.

However, it is not policy to straighten out heads in the welt for evenness as the welt will at times run uneven, whereas the legs of the stocking will run even.

In making the welt it is the general practice to use one strap only, whereas after the welt is turned two straps are used.

If the straps are in poor condition, the tendency is to get crooked welts and if one wishes to have even welts, straps must be in good condition at all times.

The metal slides upon which the ends of the welt bars slide are many times in a rusty condition and the result is that one side of the welt bar will slide freely, whereas the other side of the welt bars sticks to the slide.

Of course, the sinker heads should be checked for evenness and when one finds a head making a crooked welt this head should be checked in the leg of the stocking to see if the entire stocking is running uneven as far as the sides are concerned.

Such Perfection—

is taken for granted

She admires, but has come to *expect* the absolute perfection of today's stockings. The manufacturer's task of not only achieving that perfection, but maintaining it unvaried in dozen after dozen pairs is not an easy one. It is to end his many "headaches" in boarding that the Proctor Automatic Machines were designed . . . and the long list of prominent installations* attest to these machines' achievements.

Besides sustaining high quality results at high production, the Proctor Boarding Machines offer perfect ease and comfort to the operators.

If you finish light, medium or heavy weight, seamless or full fashioned hosiery for women or men, a Proctor Automatic Boarding Machine can bring you important money-saving advantages.

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Automatic Machine for Women's Hosiery. Production as high as 32 dozen pairs per hour. 11½ feet wide by 9½ feet deep.

Automatic Machine for Men's Half Hose. Production as high as 52 dozen pairs per hour. 10½ feet wide by 9½ feet deep.

Proctor & Schwartz BOARDING MACHINES

I have also found that crooked seams in the welt are due to poor selvages. Sometimes selvages are perfect on one side of the welt and no selvage on the other side of the welt.

One can easily determine if this is the cause by taking out the seams of several stockings where the seam was crooked in the welt and examine the selvages.

If the welt is made too loose for the size thread used, this also at times will cause crooked seams. As the contributor's trouble is only in some of the stockings he may feel that this is not the cause but I merely bring this up because I know that at times a machine is making uneven lengths and naturally the stockings running long will have a looser welt. Therefore if the construction of the welt is too loose in general the very loose welts might cause crooked seams.

I would also suggest that the contributor check the seaming machines in his plant, especially for tension and see if all machines are sewing the same number of stitches per inch. In making such an investigation one will find many times that one of several of the seaming machines are not set the same as the rest of the machines and therefore trouble with the seam will occur after the stocking is finished.

My experience has taught me that the suggestions I have made usually are the causes and remedies for crooked seams and hope that I have been of some assistance in helping him to solve his problem.

CONTRIBUTOR NO. 7011

Single or Double Yarn for Reinforcing Hosiery

EDITOR COTTON:

On page 120 of the January 1940 issue of COTTON, "CONTRIBUTOR NO. 6981" has said: "We are considering the merits of using 1/50s and 1/60s mercerized cotton singles as against 2/100s and 2/120s doubled for reinforcing yarns. * * * Could you give us some idea of the pros and cons of using single fold as against two-fold mercerized cotton?"

The writer strongly advises against the use of 1/50s and 1/60s mercerized cotton singles in the place of 2/100s and 2/120s. It has been my experience that the single yarn fuzzes up when knitting, especially in plaited heels and soles. They also have a tendency to fuzz up in dyeing and finishing. Even if gassed (to remove any fuzziness in the yarn) still the singles will fuzz up.

It will be noted upon testing that the singles yarn is not as strong as the doubles, in an equivalent count. One can realize that when two yarns are joined together in cable fashion—they form a stronger yarn than either of their component parts or the equivalent in a single yarn. Rope and cable are ply constructed for tensile strength, and the rule applies to cotton yarns as well.

It is true that singles yarn is less costly than doubles, but in quality merchandise, not enough saving can be made. For low end goods it may pass, or perhaps for back of welts, etc., where there is no eye appeal necessary.

The writer has seen 1/50s used for a toe ring. While it is passable it is not on a par with the stocking knitted from 2/100s doubled. However, there is not much surface to the toe ring area, and one can "get away with it" if so desired. With constant wear, a toe ring made from 1/50s singles will fuzz up much more than 2/100s.

CONTRIBUTOR NO. 7029

◆

EDITOR COTTON:

"CONTRIBUTOR NO. 6981" in asking his question relative to the possibility of using single yarn against ply for splicing or reinforcing yarn does not state whether the yarn is to be used on seamless or full-fashioned machines. We are assuming, however, that he has full-fashioned machines, as he could unquestionably use single yarn splicing on seamless machines in a highly satisfactory way.

There are some mercerizers producing single 50s and 60s mercerized yarns for the purpose of supplanting 100s/2 and 120s/2 on full-fashioned machines, and we know full-fashioned hosiery manufacturers who claim to be getting excellent results through the use of single splicing yarn.

It is the writer's opinion that if the inquirer is producing popular priced or low priced hosiery that he may be able to use single splicing yarn to some slight advantage as to cost, but taking into consideration the type of finish he would like to have on high quality hosiery, and the possibility of a greater number of breakdowns or break-outs on single yarn as compared to two-ply, we doubt if he will find any special advantage in the use of single reinforcing yarns in the production of full-fashioned hosiery.

CONTRIBUTOR NO. 7030

◆

EDITOR COTTON:

In reference to the question by "CONTRIBUTOR NO. 6981", who wishes to know the pros and cons of using single and double yarn in his hosiery, we would say that he will not find the wear in singles mercerized cotton that he would in the ply yarns, nor will the singles knit as well as the ply yarns. And because they do not knit as well, he will not get the production nor the quality in his fabric that he would from 2-ply.

CONTRIBUTOR NO. 7031

As I See It

More and more I am becoming convinced that "a company is known by the foremen it keeps".

Only recently have we been coming to a full realization of the importance of a company's reputation in the community in which it operates.

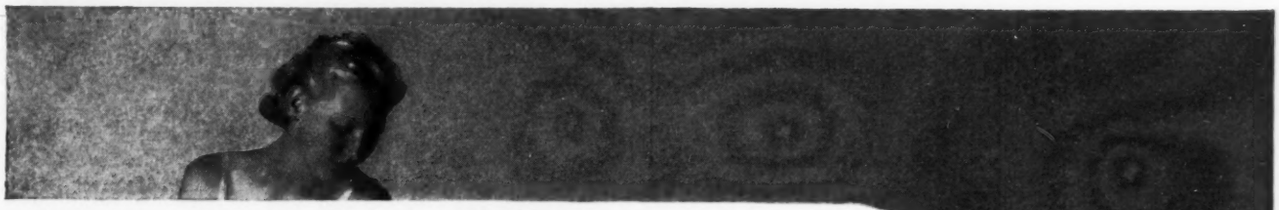
Every employee says good or bad things about the company to his friends and acquaintances in the community.

Certainly, no one plays a more important part than the foreman in affecting the attitude of his men toward the company.

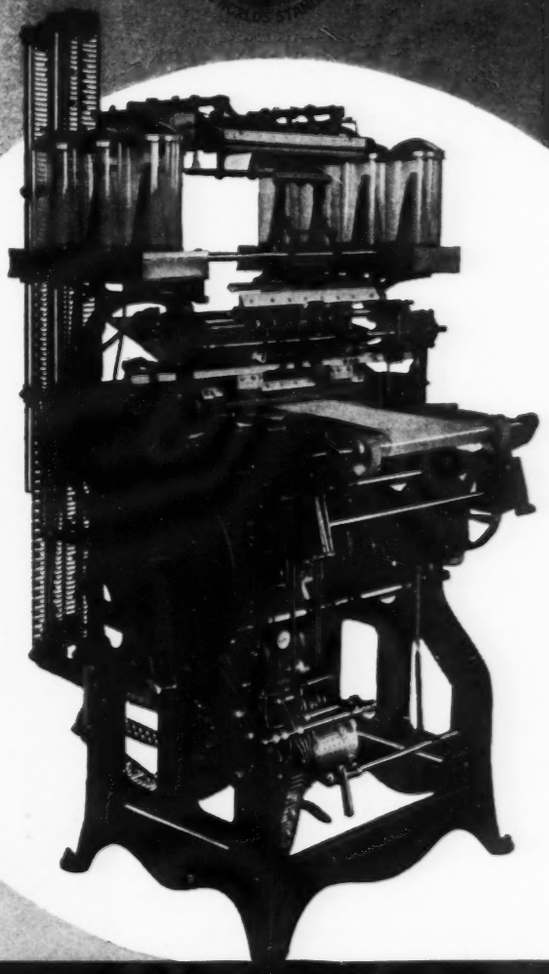
Think this over!

Does your treatment of your men inspire them to go out and spread a good or a bad reputation for your company?

—*Glenn Gardiner in "Management Information".*



Women are inspecting stockings much more critically these days!



They are smarter buyers than ever. They're refusing to buy silk stockings at any price, that show bad matching, an inevitable result of using leggers and footers. The WILDMAN Single-head, Single-Unit machine knits the entire stocking in ONE operation, perfect from top to toe. It turns out a product that completely satisfies today's most critical buyer. Let us send you complete details.

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WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Sharp Drop In Silk Retards Spring Orders In Hosiery—Buyers Want Lower Prices In Full-Fashioned—Fall Cotton Knit Underwear Prices Named With Slight Advances But Old Retail Brackets Maintained—Plans For Nylon Hosiery Announced—Record Hosiery Shipments Last Year

Philadelphia, February 16, 1940

EASINESS in the textile fibers in recent weeks with silk leading this procession has put a damper on forward spring buying of knit goods especially in silk hosiery but the same thing holds true in cotton knit underwear to an extent. Drops in cotton yarn prices have caused many to go slowly, fearing that further concessions may come in yarns that would later affect goods but there are no signs the drop in cotton will be that drastic. In fact most feel the market at present has reached a stabilization point. Easiness in wool is having the same effect in outerwear where buyers fear lower prices would weaken the goods price structure so that they are going slowly in putting down forward commitments. No one wants to get in the vulnerable position of early 1937 in respect to inventory commitments.

Men's Half-Hose

Men's short socks or slacks now account for more than one quarter of the total half-hose business and the expansion in the short type is rapid and continuous so that the 1940 ratio may be even higher. In 1939 there were 32,770,283 pairs of half-hose shipped and 9,522,436 pairs of the slacks, the latter showing more than a 100 per cent gain over the previous year. The elastic tops for these have been an outstanding reason for their current demand among consumers who like the comfort and need no garters. The recent spell of cold weather helped the half-hose business because it created an unexpectedly large demand for heavy socks whether of all wool, cotton and wool or rayon and wool. Jobbers moved all their stocks during the early 1940 cold wave and enter the year in position to take on new lines to better advantage. Spring lines are made of silk and filament rayon so far as mixtures go with bright colors wanted and novelty designs. Broad stripes are wanted as well as bright plaids and checks. In the solid colors the leader is black followed by blue, brown, gray and green. Argyles and Scotch plaids have been active in the winter half-hose.

Underwear

Fall prices for knit cotton underwear have been named and show slight advances although not enough to change former retail price brackets. In the offing is the new wage minimum which may increase costs slightly in the next few weeks and cotton yarns may snap back after several weeks of decline. Mills have good backlogs and late last year the Department of Commerce reported these as much as 80 per cent larger than the same time a year previous. These of course were mainly for spring business which was placed early due to the war buying of late 1939. There has also been a nice expansion in orders for knit sport shirts and this activity for spring is going to be reflected shortly in larger demand for fall merchandise. Steadier trends in cotton and cotton yarns is causing goods buyers to develop confidence again and underwear manufacturers still look for 1940 to be good, not much if any under 1939.

Courtesy, Holeproof Hosiery Co.

Seamless Hosiery

Anklet shipments in the last year were 30 per cent ahead of the previous year; children's and infants' lines showed a shipment gain in that year of 21 per cent, representing the most active spots in the seamless field; shipments of women's seamless goods declined slightly. At present demand for silk seamless is small because of the drop in silk which has scared buyers. Mercerizers and combed spinners are busy now shipping out yarns to makers of underwear, anklets and children's lines so that there is nothing in sight to indicate that the good run in these lines is ended; on the contrary 1940 will show another gain over the previous twelve months. Jobbers report that retailers are taking in spring anklets at a good pace at present with greatest emphasis on goods to move in the 10 cents to 20 cents retail brackets which have not been changed and this is one reason for the continued excellent consumer acceptance of this type merchandise.

Full-Fashioned

The sharp curtailment in full-fashioned hosiery production in December and January, partly seasonal but mainly due to the high basis for silk at that time, reduced the gain in shipments for the year. Shipments in the last year were up 2.7 per cent compared with the previous year but at the end of last November the gain over the same 1938 period was 7.5 per cent. The decline in silk may have other effects possibly leading to smaller use of silk substitutes than expected when silk was $4.00 to $4.50, although mercerizers are making strong attempts to keep this business especially in the low and medium priced hosiery numbers. They are trying to get knitters to make the mercerized welts in novelties such as fancy stitches and other colors. Prices of full-fashioned hosiery have been weak in the last few days reflecting the lower silk market and also the need of

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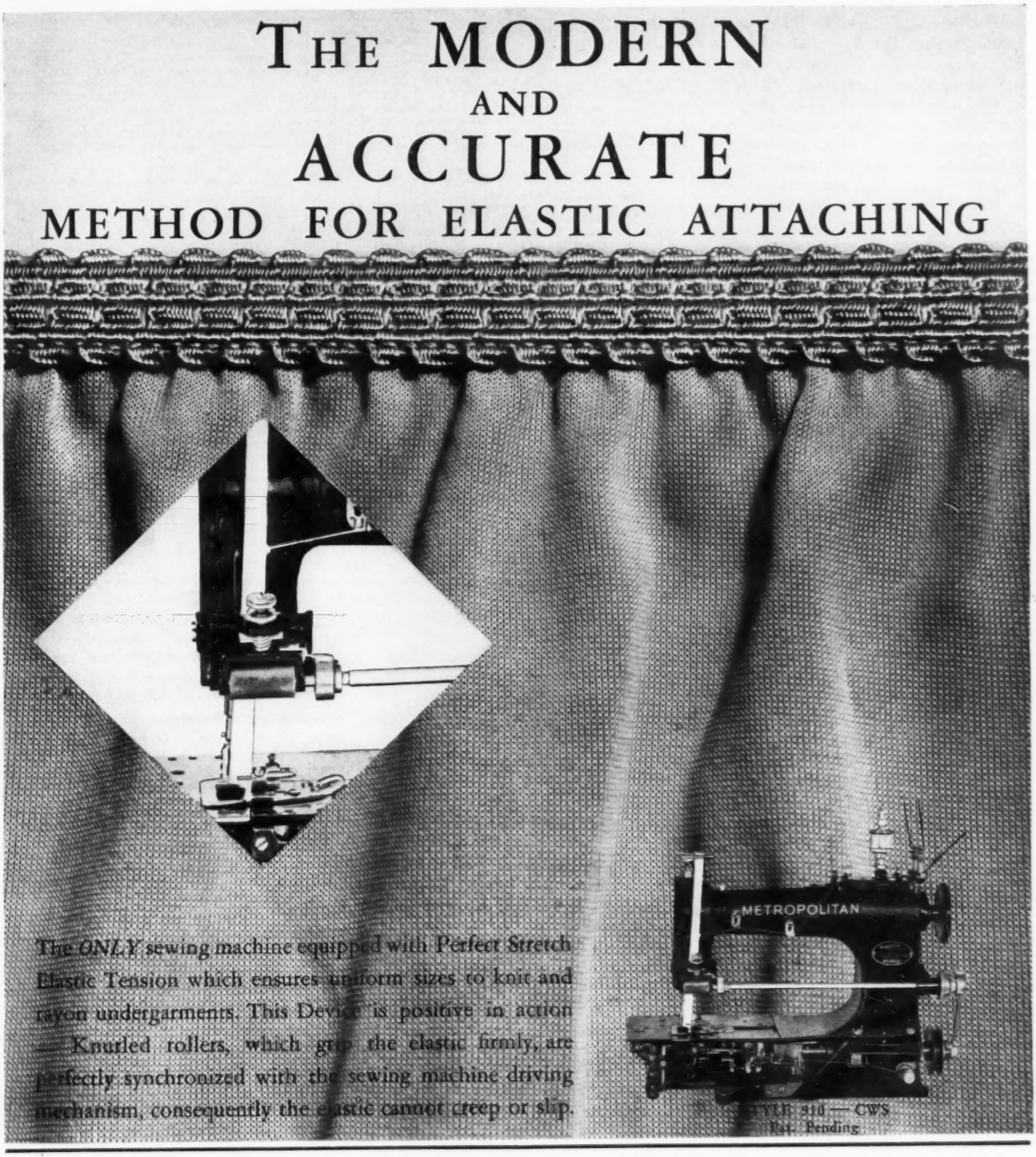

The *ONLY* sewing machine equipped with Perfect Stretch Elastic Tension which ensures uniform sizes to knit and rayon undergarments. This Device is positive in action — Knurled rollers, which grip the elastic firmly, are perfectly synchronized with the sewing machine driving mechanism, consequently the elastic cannot creep or slip.

STYLE 418 — CWS
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some knitters for business. This trend has also been noted in the stockings with mercerized welts, some knitters voiding previously announced advances in such lines. Kayser reduced its price for spring on lisle top to $5.95 from the opening level of $6.35. There have been other knitters that have rescinded previously announced price increases in full-fashioned numbers and at present the pressure from buyers is noticeable for reductions because of silk's drop. However reductions so far have been mainly in the 39 and 42-gauge styles with others remaining unchanged although barely steady. Brown-Durrell was one that rescinded some advances that were scheduled to go into effect for spring. A further advance in silk would make these demands for lower goods prices without chance of success.

FORECAST

(Opinion submitted by COTTON's market correspondent.)

Philadelphia, February 16, 1940

The tempo of business has been slower over the last month, the predicted slowing down coming on schedule but the drop in many lines has been sharper than anticipated. Manufacturers and buyers of all types of goods are no longer buying for months ahead as they did in the fall of 1939 so that the urge to sell is more in evidence and this in turn has brought about an easing in prices of many commodities including the textile fibers with the exception of rayon.

Outstanding in the drop has been silk which late last year hit a peak of $4.65 and in the last month dropped to slightly under $3.00. The drop in silk was brought about by adoption of new regulations by Japan which will give the government more control over it and its prices; it was also due to the fact that at around $4.00 American consumption fell off drastically so that many feel the going level for silk in the coming weeks will be around $3.00 where America will operate in it with more confidence although few mills are going to buy too far ahead even now.

Cotton and wool are somewhat lower than a month back but the changes have not been drastic while rayon yarns have remained unchanged. What is the outlook? There are no signs that manufacturers will resume excited buying such as last October nor will they buy far ahead so that it is difficult to foresee much of an advance in textile fibers or yarns made therefrom and yet there are indications the downswing in business will not last long nor be nearly as severe as the setback in 1937.

After a less active February and March general conditions will become active again although not quite up to the December 1939 rate. This rate, however, will be equalled again late in 1940. Prices of textiles are not going to change much in the next month although the downswing in cotton yarns, worsted yarns and some other materials may carry slightly further but there is evidence that the price drop in cotton yarns is about at its end. The upswing in textiles will probably come a little ahead of the general improvement.

It is going to be a much better year for silk manufacturers including hosiery mills than when silk was over $4.00; the lower prices for cotton yarns will help hosiery and underwear manufacturers have a profitable year permitting them to buy their raw material lower but no important price changes in goods will come with the exception of silk hosiery which will come down in line with the new level for silk.

Hosiery and underwear production will be large again this year and about equal to 1939, there being no dangerous accumulations of goods even though inventories, except with most retailers, are larger than a year ago, the increases not being nearly as large as in the 1937 period but manufacturers are proceeding with caution having that experience in mind.

Knitted Underwear Wage Minimum Defended

The underwear industry following recent hearings on the matter are expecting a minimum wage level shortly to be set under the Federal Wage and Hour Law. At recent hearings in Washington it was stated a minimum wage of 33½ cents per hour for workers in the knitted underwear and commercial knitting industry would not substantially curtail employment or increase consumer prices by Theodore Reedy, Wage and Hour Division, economist. At that time it was testified that the proposed wage minimum taken in connection with the number of employees found in each branch of the industry would increase the average direct wage for the entire industry about 1.8 per cent. Assuming that the direct percentage increase in the industry's wage bill would be passed along by the manufacturer it was stated at the hearings that the necessary increase in selling prices would amount to approximately one-half cent on each dollar.

It was admitted at the hearing that such a wage increase would affect some areas more than others but on the basis of testimony several witnesses concluded that they did not feel there would be any net curtailment of employment or dislocation of employees. Frank L. Delgado, Bureau of Labor Standards, submitted transportation cost data intended to show that the present rail rates showed no competitive advantage or disadvantage so far as the underwear manufacturing regions were concerned. Roy A. Cheney, president of the Underwear Institute testifying on behalf of the industry, said he was taking no position either for or against the recommended minimum. Within the last week underwear manufacturers have been naming prices on the fall season and if any higher minimum is set many look for these prices to be advanced somewhat although others feel that manufacturers have discounted a 33½ cent minimum and that no further changes on this account will be seen.

New Record is Set In Hosiery Shipments

A new all time record in hosiery shipments was set during the last year, 1939, showing a gain of 8,500,000 dozen over the previous record in 1938. Most of the gain last year is accounted for by a rise of about 1,000,000 dozen in women's full-fashioned, 850,000 dozen in half-hose and men's slacks combined, 1,000,000 dozen in children's and infants' hose, 700,000 dozen in bundle goods and almost 5,000,000 dozen in anklets, principally misses. The gain in women's full-fashioned numbers is one to be expected, the National Association of Hosiery Manufacturers believes, registering a normal increase. The outstanding gain in the last year was in the production of men's slack socks and shipments of this type merchandise more than doubled in 1939 as compared with the previous year. At the present time the shipments of men's short socks account for almost one-third of the total production of men's half-hose while in the previous year it was only about one-ninth. However, this does not all represent an increase in production but rather that fewer men's half-hose of regular length are being produced which is indicated in the report showing that men's half-hose and slacks shipped in 1939 totalled about 2.1 per cent larger than in the previous year. An increase of 30 per cent in shipment of anklets last year was also significant, indicating principally larger sales of misses goods.

Constantine Says Hose Profits Have Lagged

Earl Constantine, president, National Association of Hosiery Manufacturers, pointing to the achievement of another volume record in the hosiery industry last year said that with the exception of a limited number of companies whose operations were profitable the industry generally had an unsatisfactory year. This condition he said resulted principally from the fact that commodity costs have gone up higher and faster than hosiery prices. Also to be added to this is the fact that labor costs in the industry likewise increased during the year as minimum wages were fixed for the industry by the Administrator of the Wage and Hour Law and put into effect September 18. Mr. Constantine said the 32½ cent minimum wage applied to the seamless operations of the industry affected the labor costs of such operations far more severely than did the 40 cent minimum applied to the full-fashioned operations. He emphasized the fact that the seamless minimum was particularly severe on those plants which manufacture the cheapest grades of hosiery selling at as low as 10 cents a pair retail.

He stated that between the middle of December 1938 and the same date of 1939 the price of raw silk went up 129

CONTACTS make CONTRACTS

at the 36th Annual

KNITTING ARTS EXHIBITION

COMMERCIAL MUSEUM ▪ PHILADELPHIA ▪ APRIL 15, 16, 17, 18, 1940 ▪

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THIS year's get-together of producers and purchasers is one you positively *can* CASH-IN on. It's an ex-SELL-ent opportunity. Don't put it off—PUT IT OVER! Here's the way to sign your sales insurance policy.

MAKE YOUR SPACE RESERVATIONS TODAY!

The price of a space 100 square feet is only $150, and this includes booth complete with backwall, side partitions, desk, desk chair, Bentwood chairs, Crex rug, hat tree and regulation booth sign. Where electricity and steam are necessary, these are also included.

For full information (and you'd better hurry) WIRE, 'PHONE or write to

ALBERT C. RAU, Manager

KNITTING ARTS EXHIBITION

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per cent. "During this same period the best estimates available indicate that the prices of ladies' silk stockings increased not to exceed 17 per cent. Another way to put it is that silk went up from $1.79 a pound to $4.10 a pound while volume branded hosiery went up from $6.00 to not exceed $7.00. A year ago silk was the second largest cost item in silk hosiery. Today it is the largest expense item and is twice as large as the next item which is labor."

Mills Approve 35 Cent Outerwear Wage Rate

Harold R. Lhowe, executive director of the National Knitted Outerwear Association, testifying at a hearing of the Wage-Hour Division in Washington said that the Association approved the recommended minimum wage of 35 cents an hour for the industry as recommended by Industry Committee No. 7. Its approval he said was based on the understanding that the trade will be adequately and generally enforced and that the minimum recommended refers to the pay of minimum experienced workers and does not apply to learners or newcomers in the industry. The Association approved the recommended effective date of July 1 for the suggested minimum. At the hearings in Washington an economist for the Wage-Hour Division testified that the proposed rate would cause an increase of 2.87 per cent in the wage bill of the industry and of 0.68 per cent in operatinng costs as a whole.

"Except for the short and inconclusive test of the NRA", Mr. Lhowe testified, "this industry has had no experience with a general nation wide increase in wage minimum or otherwise. We recognize that the idea of establishing uniform wage levels and gradually increasing such levels is an experiment. We are studying its development. The establishment of the 25 cent minimum rate in October 1938 was not helpful in furnishing a basis of experience because at that rate but few in the industry were affected. The advance of the minimum to 30 cents per hour last fall has not been in effect sufficiently long to justify any conclusions. The effect therefore of another advance to 35 cents an hour under a wage order as recommended cannot be definitely stated. While it may be true that the increase of wages for the minimum skilled workers may not amount to much in relation to the entire labor cost in an industry no economist can foretell to what extent it may be necessary from a practical operating point of view, to increase higher wages paid in the more skilled classifications to avoid dissatisfaction and labor difficulties. We do not believe an increase of a minimum wage to 35 cents per hour will be harmful. We have no assurance as to the extent to which it will be beneficial to the worker or the industry. We are willing to co-operate with the administrator in the spirit of this law and therefore on behalf of the industry we represent generally to approve the recommendation."

Union Asks Dismissal of Apex Court Appeal

American Federation of Hosiery Workers, Branch No. 1, on February 6 asked the United States Supreme Court to dismiss an appeal asked by the Apex Hosiery Company of Philadelphia seeking reinstatement of $711,952.00 in claims against the union for damages incurred during a 1937 sit-down strike. The union was found guilty by a jury in the Federal District Court of Philadelphia of violating the Sherman Anti-Trust Act and was assessed triple damages under the law. The Third United States Circuit Court of Appeals however held that the sit-down was not a Sherman Act violation and reversed the trial court. "Unless the local strike activities are part of a conspiracy aimed at interstate commerce and vitalized by an intent to monopolize the supply of the article entering and movin interstate commerce, or to fix the price of it in inter-state markets, the local strike activities are not within the reach of the Federal power under the Sherman Anti-Trust Act," the union said.

Cotton Hose Gain Seen in Silk Rise

Interest in cotton hosiery has greatly increased among manufacturers and retailers during the past six months, according to the Bureau of Home Economics of the Department of Agriculture at Washington. To date all hosiery designed by the Division has been made of high quality commercial yarns and at the present time hosiery made of seven varieties of long staple cotton, of even higher quality than any used up to now, is being spun in mills for the Bureau. Great care has been taken in designing and making all hosiery types and resulting styles have proved that both cotton and lisle hose can be very smart and flattering with almost every type of costume.

Experiments now in process are considered with run-resistant types of lisle hosiery made with very fine mesh effect. Since the project started cotton and lisle hosiery have been designed in various styles for all kinds of wear including special types for wear in the garden, with street costumes, on the beach, with evening apparel, and for hygenic purposes. Latest designs include lace and mesh styles in lisle and lisle and silk both with the conventional top or the two-way stretch elastic top; small lace effects in both lisle and lisle and silk; fish net types in lisle; and hygenic styles with the plain, stretch, two-way stretch, of four inch two-way stretch elastic top. In the hygenic hosiery the leg yarn is dyed with an indanthrene dye stuffs before the hose is knitted while the foot yarn is mercerized and gassed.

Exporter Doubts Gain in South American Sales

Returning from a visit to all but two of the South American countries, Sam Bloch, export manager for Julius Kayser & Co., described the prospects for expanding exports of hosiery and underwear as less favorable than on a previous trip there three years ago. It was indicated that war times cannot better the peace-time markets in at least the four highly industrialized Latin-American Republics of Argentine, Brazil, Chile and Uruguay. It was found there are possibilities in Colombia, Venezuela, Ecuador and Peru. As an example of what the exporters here must face in the four most advanced countries he produced samples of Brazilian silk stockings that correspond more or less with qualities and prices in the other three. They consisted of a two-thread 60-gauge of single unit construction retailing at the low price of $1.55 a pair as against the price here of $1.95; a two-thread 54-gauge single unit crepe at $1.15 compared with $1.35 to $1.65 here.

Nylon Explained by du Pont

Pointing out that popular interest in this new product has been intensified by the beginning of manufacturing operations at the new plant at Seaford, Delaware, the DU Pont company has explained the word "nylon". "Since nylon is not produced chemically from cellulose nor does it have a cellulose base it cannot be properly be considered as a type of rayon. Furthermore the properties of textile fibers and yarns made from nylon are quite different from those of any existing type of rayon particularly as regards strength and elasticity. Nylon fibers are not properly termed synthetic silk, say the officials. Nylon is a protein like chemical product which simply means that it has somewhat the same chemical composition as the proteins of

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which silk, hair and wool are common examples. Nylon does not have an exact chemical counterpart in nature and fibers made from it cannot therefore be referred to as synthetic silk although resembling silk in certain respects.

"Moreover nylon does not simply refer to fibers or yarn spun from a synthetic polyamide but to the polyamide itself, from which fibers and other shapes may be formed. The term nylon does not refer to any particular form of the polyamide any more than does the term glass refer to any particular form or article of glass. Thus nylon does not have reference to one particular chemical compound but rather to a family of related synthetic compounds, the polyamides, of which there are many members." Hosiery manufacturers expect to make limited shipments of nylon hosiery around May 15 and reports indicate that they will be sold at prices ranging from $8.25 to $11.75 per dozen. Altogether there will be possibly more than a hundred sources from which retailers may obtain nylon hosiery at the time of their simultaneous introduction in May.

Cheney Reviews Underwear Year

Underwear manufacturers have just closed a year of record production and have entered 1940 with a favorable inventory position and a large volume of orders on their books for spring delivery, according to Roy A. Cheney, president of the Underwear Institute. Notwithstanding this favorable situation Mr. Cheney commented on the temporary hesitance on the part of both buyer and seller to consider at present the customary booking of fall business. He said this hesitance on fall orders was occasioned by uncertainty as to the effective date of minimum wage increases in the underwear industry, also by raising raw material costs and threatened legislation to reimpose processing taxes on cotton and perhaps other textile fibers. It was pointed out that underwear knitted lines and men's and boys' woven underwear reached a total production of 47,000,000 dozens last year which would be about one per cent over the previous peak of 1936, some 6 per cent over 1937 and from 20 to 25 per cent above the years 1934, 1935 and 1938.

Mr. Cheney pointed out mill inventories were in a reasonably satisfactory condition in 1939, the year-end inventories being estimated at 6,900,000 dozens or about 8 per cent above a year previous but 7 per cent less than at the end of 1937. Orders on hand at the end of September last year totalled 6,500,000 dozens, the highest quantity on record for that period of the year. The underwear industry has had three very good years in the last four so far as volume was concerned the only exception being 1938. Profits of manufacturers as a rule did not keep pace because of the very low level of prices which did not change until late in 1939 and when fall lines were opened early this year when minor increases were put into effect.

Homestead Hosiery Project Operating

The Cumberland Homestead, government project near Crossville, Tenn., which began operations last fall with a small number of machines has continued to expand operations as additional machines have been installed. The Dexdale Hosiery Mills Co. of Lansdale, Pa., is the operator of the plant. A number of employees from the ufacturing Co., at Norristown, Pa., where they studied the mechanism of Homestead were sent to Wildman Manthe Wildman machines and later they went to Lansdale to receive instruction in the manufacture of full-fashioned hosiery. Following the completion of training courses these operatives returned to the plant at Crossville and instructed the other operatives in the manufacture of the hosiery. Plans are said to call for thirty full-fashioned machines of the Wildman type and silk throwing machinery is also being installed. At a cost of $100,000 a modern mill building was constructed for this new industry, measuring 60x350 feet. Bases have been prepared in the building for forty-eight machines; the building is air-conditioned.

Penna. Outterwear Association Election

The annual dinner of the Pennsylvania Division of the National Knitted Outerwear Association was held in Philadelphia, February 8. The affair marked completion of twenty years of this association. Roger W. Whitman, president, and Harold R. Lhowe, secretery of the national association were guests of honor. Officers were elected for the present year as follows: president, Bernard Steuer of Tartan Knitwear Mills; vice-president, A. H. Liebster of M & M Knitting Mills; treasurer, Martin J. Feld of Novelty Knitting Mills and H. H. Cohen was again chosen secretary and counsel.

The Cross-Index of all knitting articles appearing in "Cotton" during 1939 is now available to subscribers having a complete 1939 file of the magazine.

An Eye on the Knitting Mills

Standard Hosiery Mills, Alamance, N. C., has installed twenty new 200-needle "Komet" links-and links machines, and ten of the 132-needle type are scheduled to be in operation soon. These machines are manufactured by Scott & Williams, Inc.

Gropper Knitting Mills, New York City, manufacturers of men's knitted silk ties, have moved to larger quarters on the third floor at 16-18 West 22nd Street.

Kale Knitting Mills, Inc., Mebane, N. C., has begun manufacturing ladies' full-fashioned hosiery. Four machines and auxiliary equipment have been installed.

Danita Hosiery Mills, Inc., Newark, Del., have completed an addition in which will be housed new 51-gauge machines.

Devon Knitting Mill, Eschbach, Pa., will re-arrange the present equipment and install additional knitting machines.

Longmeadow Mills, Inc., Springfield, Mass., successor to the Harris Silk Hosiery Company, is reported to have started operations.

Cordell Hosiery Corporation, Greensboro, N. C., has been granted a charter to manufacture all kinds of hosiery.

Shoaf-Sink Hosiery Mills, Lexington, N. C., is expanding its finishing department by adding space 60x160 feet.

A hosiery mill to produce children's and infants' hosiery will be started at Englewood, Tenn., by W. P. Chestnutt.

Harriss & Covington Hosiery Mill, Inc., High Point, N. C., will construct a boiler room at a cost of approximately $2,500.

It has been reported that the hosiery mill located at Bankhead Farmsteads, near Jasper, Ala., has added another shift, putting the plant operations on a two-shift basis.

Cooksville Hosiery Mill, near Vale, N. C., has constructed a new building and is now operating 22 seamless machines.

Harriman (Tenn.) Hosiery Mills, which have had a new addition under construction for some time, plan to begin operations in full in the near future.

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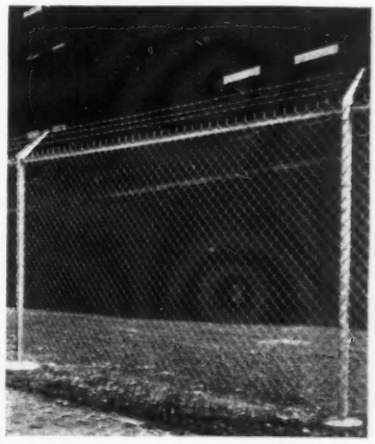

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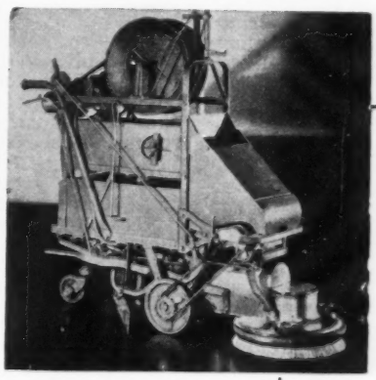

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TRENDS—YARN MARKETS

Yarn Prices Soft with Exception of Rayon—Silk Snaps Back After Going Under $3.00 with Larger Mill Interest—Cotton and Worsted Yarns Slightly Lower—Buyers Back To Hand-To-Mouth Trading—Lull Expected To End In Few Weeks.

Philadelphia, February 16, 1940

EXTREME caution has been the rule among buyers of all types of yarns, lower silk, cotton and wool prices being prime factors in this. In the meantime, manufacturers are using old yarn contracts at a fair rate for the time of the year so that most regard the let-up in new commitments as natural after the war bulge of late 1939. Buyers are not going to carry as large inventories as they thought when war broke out; this war is different and buyers are going to act differently in meeting its conditions. They expect business to be good without a boom and while prices of many yarns are substantially lower this may serve to give knitters a better margin and later turn out to be a good factor for profits. There is an "if" in this and that is if manufacturers do not give this all away in lower prices for goods. There is no evidence that the price drops in yarns will carry much further.

Cotton Yarns

Cotton yarns have declined faster than cotton during the month, yarn prices being from one to two cents lower with the sharpest drops taking place in carded weaving numbers while the strongest resistance was apparent in combed. Both carded and combed knitting yarns have been weak and underwear manufacturers in some extreme instances are able to buy counts such as 30s single for two cents less than a month ago. At that time it was quoted at 36 to 37 cents and in the last few days Pennsylvania knitters have reported that it has been offered them slightly under 34 cents. A good grade of carded knitting which a month ago was quoted at 31 cents for 30s single has been sold in the last few days for a shade under 30 cents. There has been no change in mercerized yarn prices which are fairly steady at around 74 cents for 60s two-ply ungassed.

Buying interest has been quiet as it usually is when prices are declining but in the last week there were signs that a more stable period was at hand. There has been more interest from buyers but large contracts for delivery ahead are not numerous. Although knitters have decided to wait for lower prices spinners point out that the market level does not have far to go to reach the basis at which substantial buying was noted last year. In contrast to that time raw cotton is considerably higher and in addition carded yarns have been affected by the higher wage minimum that went into effect late last year. In view of this situation spinners do not believe that prices will slide off materially from the present level. Not only has new business been slack but shipments on old contracts have also been tapering off and a large number of spinners are in need of immediate specifications on which to run.

Combed and mercerized yarns occupy a different position from carded. Not only have quotations on combed and mercerized held up better than carded but producers of these qualities are sold further ahead and at the same time continue to receive fairly good specifications on these running contracts. This condition is reflected in a steady market in mercerized yarns which are being used in larger quantities in both hosiery and underwear. Single combed has not held as well as the two-ply and deliveries on it have been relatively smaller compared with the two-ply combed. In the meantime export demand for cotton yarns which spurted sharply during the last three months of 1939 has declined almost as fast as it developed. Mercerizers report that foreign buyers getting their normal supplies from England are now receiving normal shipments from that country so that they no longer are interested in new sources of supply.

Silk

After hitting its peak December 26, when the market rose to more than $4.50, weakness developed and prices ran off to slightly less than $3.00 when support developed. This wide fluctuation over such a short period of time and coming just as spring prices for full-fashioned hosiery were being announced has caused a period of great uncertainty in the markets. It is apparent however that when silk hit $3.00 or slightly lower a considerable volume of business from American knitters developed and yet the opinion is that relatively few covered far into the future at that time. The drastic liquidation in silk has been attributed to steps taken by the Japanese government to gain more control of silk and the level at which it should sell. It was generally agreed that American consumption would remain relatively small at $4.00 or over.

It was also felt that with the price around $3.25, American consumption would be large because this would permit knitters to sell their lines in price brackets that fit current consumer demands. Mill takings in the United States during January were 29,506 bales compared with 21,128 consumed in December and 40,816 bales used in January 1939. Raw silk arrivals in the United States during January amounted to 33,121 bales compared with 36,092 bales a year previous. Reports of the Commodity Exchange indicate that in December raw silk consumption by the hosiery trade was 92.9 per cent of the total deliveries to American mills.

Rayon

Demand for rayon yarn is holding up well compared with smaller takings of other textile fibers. Deliveries of rayon filament yarn to domestic consumers in January amounted to 31,900,000 pounds or slightly smaller than December and comparing with 27,100,000 pounds in January 1939. Stocks of rayon yarn held by domestic yarn producers at the end of January totalled 7,000,000 pounds which represented a small increase over the very low stocks held by them at the end of the year. Notwithstanding this favorable position of the producers consumers of knitting yarns and also circular knit tubing report that deliveries are far easier than they were late last year and that on all except the finest deniers they are able to obtain almost any delivery wanted. Demand for acetate process yarns continues to keep ahead of production and the shortage of cuprammonium counts also continues acute. Despite the sharp recessions in raw silk prices rayon yarn producers are of the opinion that rayon yarn will be used for welts and feet in full-fashioned goods.

Worsted Yarns

While there has been no marked change in worsted yarn prices this month they have been easy because of a lower trend in both spot wools and in quotations of top futures. The lower trend in the raw material market has caused buyers of yarns as well as goods to withhold new commitments until they can see if the decline is over. Not only has new business been quiet in worsted yarns but shipments on running contracts have been small and many spinners have been working at half time or less but producers of the so called cheapener yarns made out of blends with other fibers have been operating at fair rates. Spinners are quoting 2-20s, 50s, Bradford at $1.25 or the same price as a month ago and not many are willing to shade this by more than 2½ cents as they assert that yarns are cheap in relation to the present level of the raw market.

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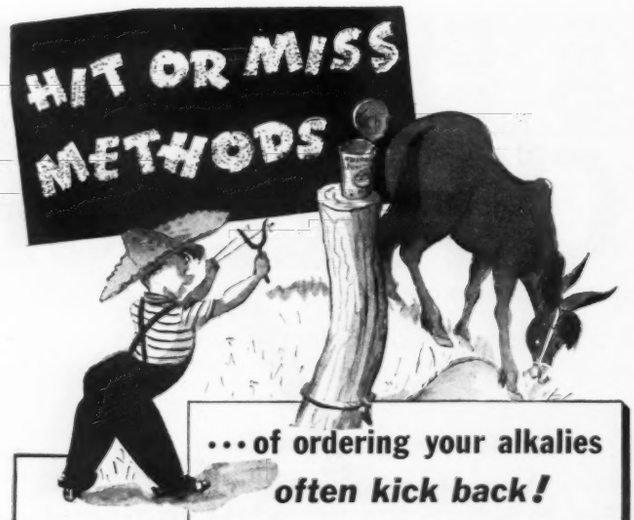

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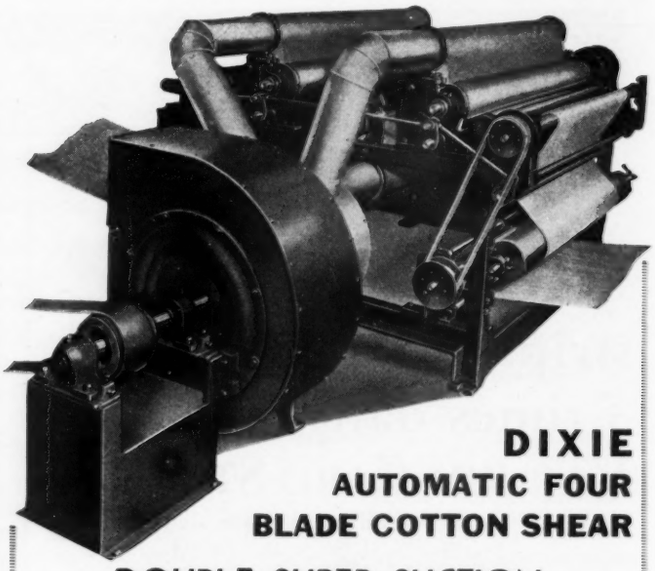

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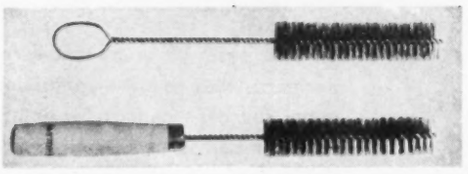

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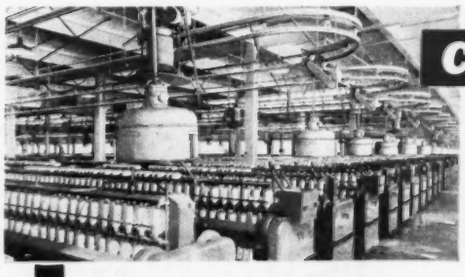

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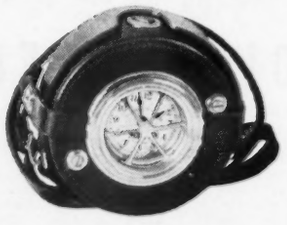

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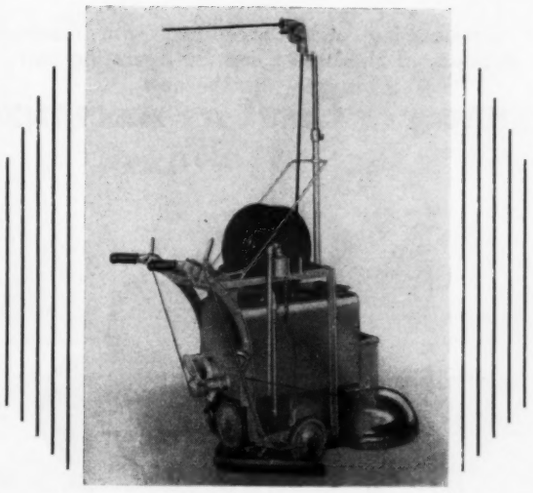

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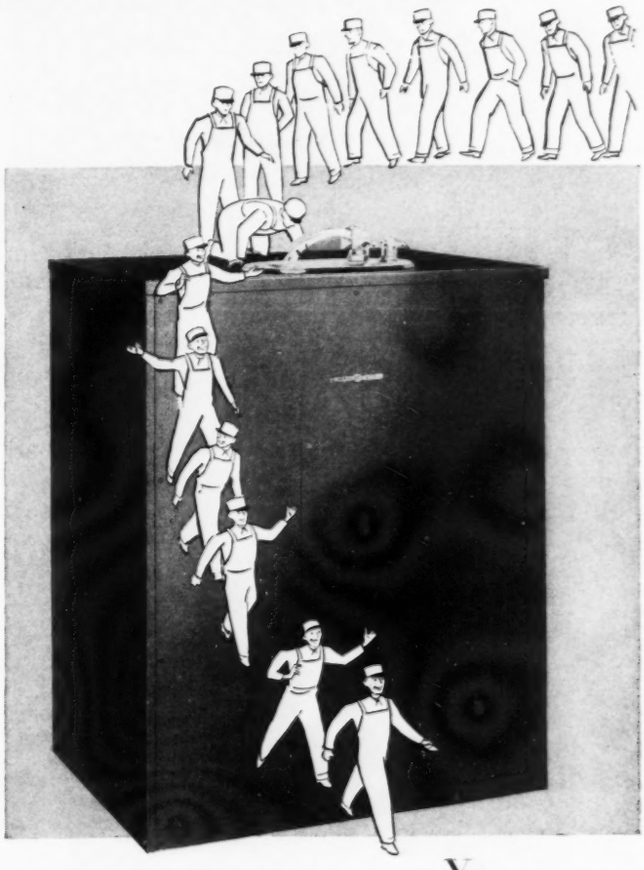

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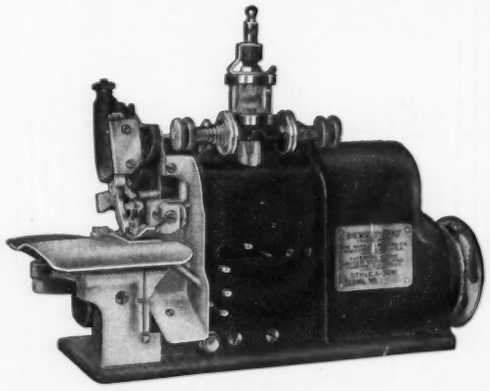

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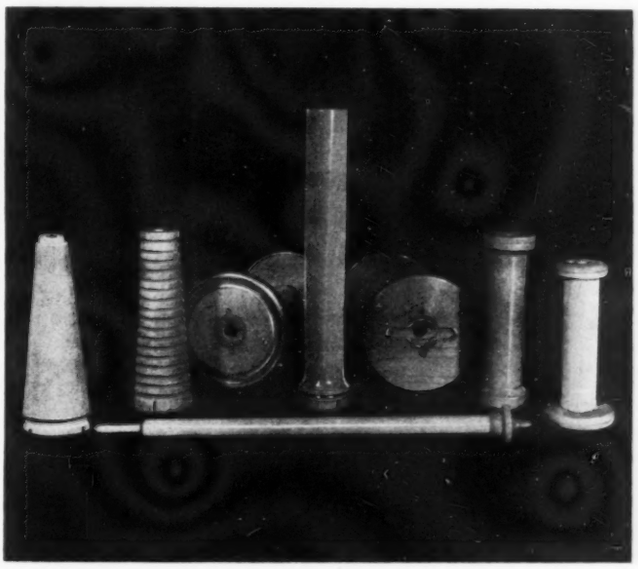

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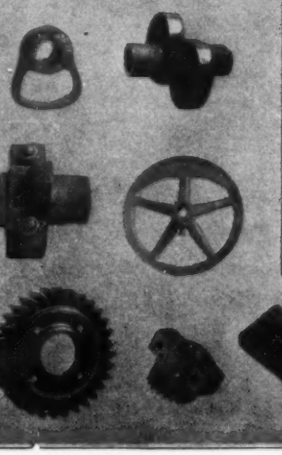

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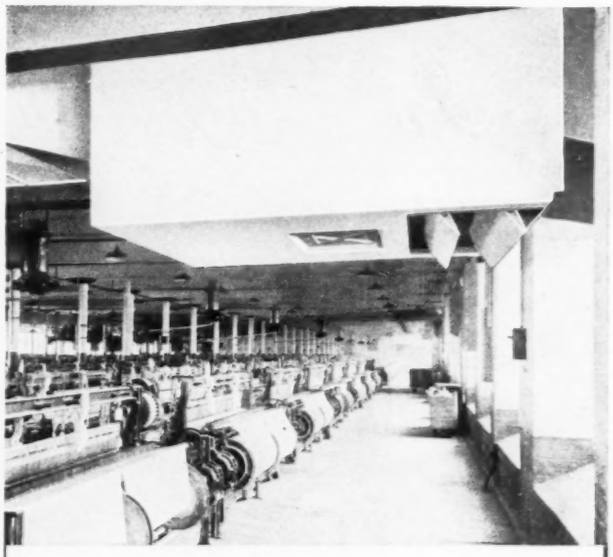

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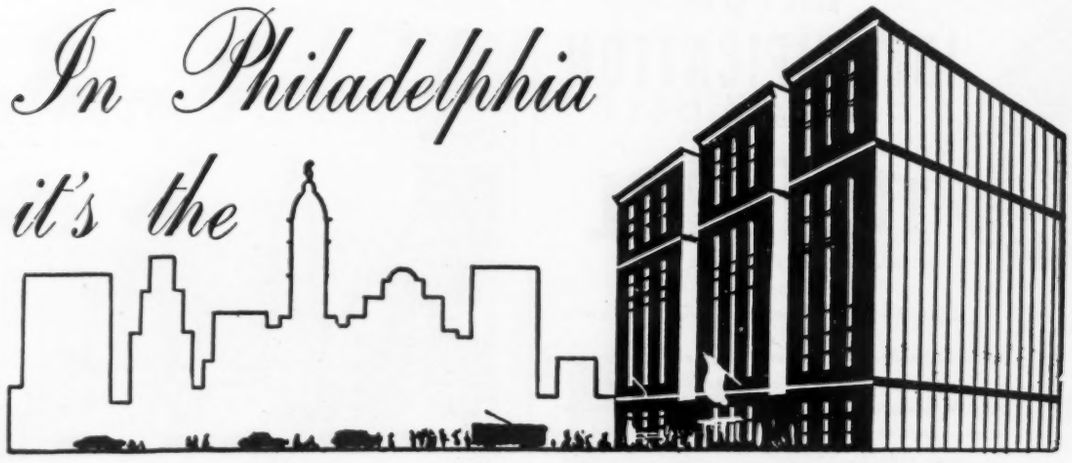

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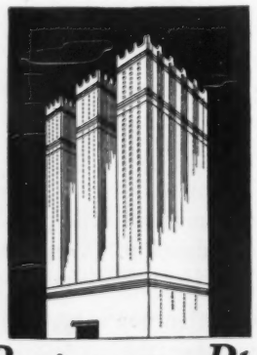

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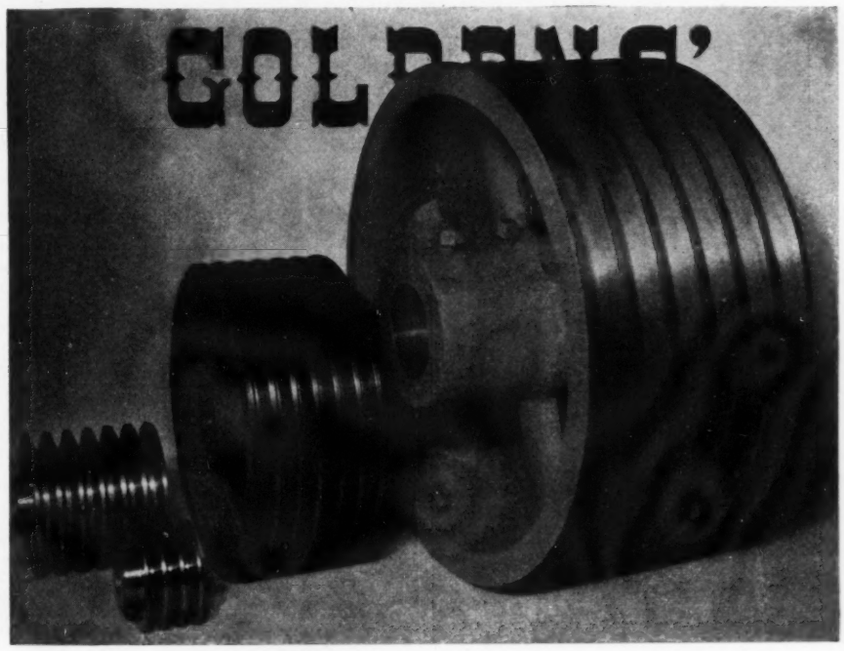

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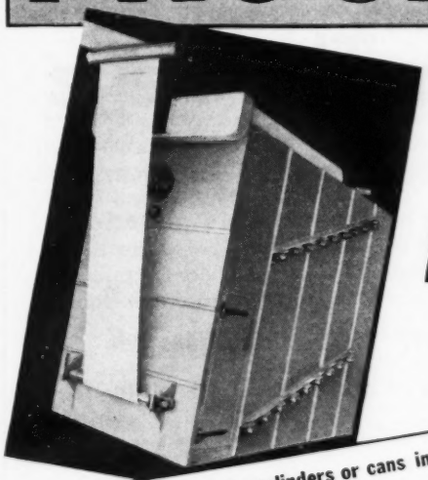

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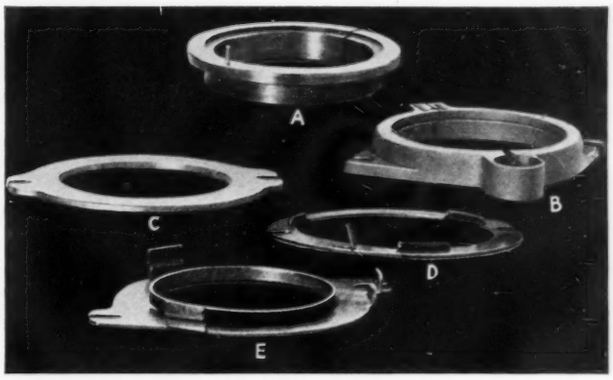

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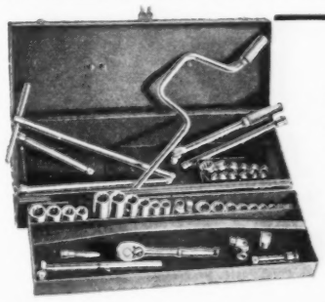

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